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ANNUAL REPORT

OF THE

BOARD OF REGENTS

OF THE

SMITHSONIAN INSTITUTION,

SHOWING

THE OPERATIONS, EXPENDITURES, AND CONDITION OF THE INSTITUTION

FOR THE

YEAR ENDING JUNE 30, 1895.

REPORT

OF THE

U. S. NATIONAL MUSEUM.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1897.

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AN ACT PROVIDING FOR THE PUBLIC PRINTING AND BINDING, AND THE DISTRIBUTION OF PUBLIC DOCUMENTS.

Approved January 12, 1895.

"Of the Report of the Smithsonian Institution, ten thousand copies; one thousand copies for the Senate, two thousand for the House, five thousand for distribution by the Smithsonian Institution, and two thousand for distribution by the National Museum."

REPORT

OF THE

U. S. NATIONAL MUSEUM,

UNDER THE DIRECTION OF

THE SMITHSONIAN INSTITUTION,

FOR THE

YEAR ENDING JUNE 30, 1895.

REPORT OF THE U. S. NATIONAL MUSEUM FOR THE YEAR ENDING JUNE 30, 1895.

SUBJECTS.

I. Report of the Assistant Secretary of the Smithsonian Institution, in charge of the National Museum, with Appendices.

II. Papers describing and illustrating collections in the U. S. National Museum.

UNITED STATES NATIONAL MUSEUM,
UNDER DIRECTION OF THE SMITHSONIAN INSTITUTION,
Washington, December 1, 1895.

SIR: I have the honor to submit herewith a report upon the present condition of the U. S. National Museum, and upon the work accomplished in its various departments during the fiscal year ending June 30, 1895.

Very respectfully,

G. BROWN GOODE,
Assistant Secretary, in charge of U. S. National Museum.

Mr. S. P. LANGLEY,
Secretary Smithsonian Institution.

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PART I.

REPORT

UPON THE

CONDITION AND PROGRESS OF THE U. S. NATIONAL MUSEUM DURING THE YEAR ENDING JUNE 30, 1895.

BY

G. BROWN GOODE,

ASSISTANT SECRETARY OF THE SMITHSONIAN INSTITUTION, IN CHARGE OF THE U. S. NATIONAL MUSEUM.

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I.—GENERAL CONSIDERATIONS.

By act of Congress passed in 1846 the Smithsonian Institution became the only lawful place of deposit for "all objects of art and of foreign and curious research, and all objects of natural history, plants, and geological and mineralogical specimens belonging to the United States." These collections have served as a nucleus for the National Museum of the United States. For many years this Museum was supported entirely at the expense of the Smithson fund, and a considerable portion of the collections is the property of the Institution through gift or purchase.

A "museum" has been defined by Professor Huxley as "a consultative library of objects." Not only is the National Museum such a consultative library, but it is an agency for the instruction of the people of the whole country. It keeps in mind the needs of those whose lives are not occupied in the study of science, as well as of the teacher and the skilled investigator. Its benefits are extended without cost or reserve to hundreds of thousands of visitors from all parts of the United States who enter its halls every year, and through the distribution of the duplicate specimens in the Museum, made up into sets and accurately named, to public institutions in all parts of the country.

Among the most important features of the operations of the Museum during the year may be mentioned the reorganization of the exhibits in several of the departments, notably in the departments of mammals and prehistoric anthropology. Entire rearrangement of these collections has been effected, with a very gratifying result.

A large number of the curators have been necessarily engaged in the preparation of exhibits for the Atlanta Exposition. This work has, of

course, interfered seriously with the realization of the plans previously laid out by them for the development of their respective departments. Several curators were absent from the Museum for a considerable portion of the year. Two were detailed by the Museum to cooperate with the United States Fish Commission in certain special investigations of aquatic life off the coast of Alaska, and others were absent in the field for several months.

A.—ORIGIN AND DEVELOPMENT OF THE MUSEUM.

The history of the origin and development of the Museum has been detailed in previous reports, and was made the special subject of a paper entitled "The Genesis of the National Museum."[1] For our present purpose it will suffice to repeat a few of the most essential facts as there stated.

The formation of a national museum in the city of Washington was first undertaken by a society organized in 1840, called "The National Institution," and afterwards "The National Institute," which was for four years exceedingly prosperous and active. The nucleus for a national museum was gathered by this society in the Patent Office building in Washington, and public opinion was educated to consider the establishment of such an institution worthy of the attention of the Government of the United States. In 1846, having failed in securing the public recognition at which it aimed, the society became inactive, and eventually, in 1861, passed out of existence. In the meantime the Smithsonian Institution had been organized, but from 1844 until 1858, when the so-called "National Academy of Curiosities" passed into the charge of the Smithsonian Institution, the term "National Museum" was not in use. From that time onward it was used, unofficially, to designate the collections in the Smithsonian building.

In January, 1847, the first Board of Regents of the Smithsonian Institution, after many weeks of consultation and deliberation over the plans for organization, unanimously voted the following resolution:

> *Resolved*, That it is the intention of the act of Congress, and in accordance with the design of Mr. Smithson, as expressed in his will, that one of the principal modes of executing the act and the trust is the accumulation of collections of specimens and objects of natural history and of elegant art, and the gradual formation of a library of valuable works pertaining to all departments of human knowledge, to the end that a copious storehouse of materials of science, literature, and art may be provided, which shall excite and diffuse the love of learning among men, and shall assist the original investigations and efforts of those who may devote themselves to the pursuit of any branch of knowledge.[2]

After the "national cabinet" had been delivered to the Regents, annual appropriations were made by Congress for its maintenance. During the twenty-three years which followed, the collections were

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[1] "The Genesis of the National Museum," Report of the Smithsonian Institution (U. S. National Museum), 1891, pp. 273–330.

[2] Report of committee on organization, p. 20.

greatly increased and were made the basis of numerous important memoirs upon the natural history and ethnology of America. The public halls, with their arrangements for the exhibition of a portion of the collection, also received a due share of attention, and a certain amount of instruction and pleasure was afforded to visitors. The appropriations, however, were meager, the space limited, and the staff was so inadequate that little could be done except to keep the collections in good preservation.

The broad plan upon which the operations of the National Museum are now conducted was anticipated as early as 1853, when Professor Henry wrote:

> There can be little doubt that in due time ample provision will be made for a library and museum at the capital of this Union worthy of a Government whose perpetuity depends upon the virtue and intelligence of the people.[1]

The difficulties attending the formation of such a museum were appreciated by him, and in his report for 1849 he spoke with much emphasis of the difficulties attending the assuming by the Institution of the care of the national collections, and in the report of the Institution for 1870[2] he again carefully expressed his opinion as to the aims proper to such a museum.

> There is [he wrote] scarcely any subject connected with science and education to which more attention is given at the present day than that of collections of objects of nature and art known under the general denomination of museums. This arises from their growing importance as aids to scientific investigation and instruction.

In the report for 1873[3] allusion was made to the increase in the national collections, even then very great, "requiring the utmost exertions of the limited force connected with the National Museum for its proper treatment."

Although the appropriations for the Museum have of late years been more liberal, it is certain that, on account of the immense annual increase in the quantity of material received, quite as much caution as ever is still needed in the development of its plans for the future.

The Smithsonian Institution from its foundation fostered explorations, and its museum was enriched by the numerous ethnological and natural history objects brought home by the explorers. Many gifts were received from private sources, and valuable objects were deposited in its Museum for safe-keeping. The nucleus of its collections was a small but valuable cabinet of minerals formed by the founder, James Smithson, who was himself a chemist and mineralogist of high repute, and a Fellow of the Royal Society of London.

At the time of the establishment of the Institution several naval expeditions and surveys of the public domain were being organized by

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[1] Report of the Smithsonian Institution, 1853, p. 245.
[2] Report of the Smithsonian Institution, 1870, p. 31.
[3] Report of the Smithsonian Institution, 1873, p. 48.

the Government, and during their progress large collections of ethnological and natural history objects were made. Important foreign material was obtained by the Pacific Exploring Expedition, Perry's Expedition to Japan, and other naval expeditions, while the naturalists attached to the Pacific Railroad Survey, the Mexican Boundary Survey, and the surveys under the Army Engineer Corps, brought together great collections illustrating the natural resources and ethnology of North America.

A new source of growth, subsequent to 1871, was the exploration of the waters of North America by the United States Fish Commission. The great collections of all forms of aquatic life made by the Commission found their way gradually into the National Museum, to be placed beside the collections of other bureaus of the Government engaged in scientific work.

At the close of the Centennial Exhibition of 1876 the exhibits of the United States Government and those of numerous foreign governments and of private exhibitors came to the National Museum.

A new period now began. The storage rooms and exhibition halls of the Smithsonian building were already overflowing with the accumulations of thirty years, and the small number of persons employed in caring for them were overburdened and unable properly to perform the requisite work. The limits of the collections had become wider, and a new and broader classification was found to be necessary. The growth of the country in wealth and culture had led to the establishment of many local museums, and the educational influences flowing from these and from the Centennial Exhibition caused a demand for more efficient methods of museum administration. The exhibition of 1876 had been indeed an event of great educational importance to the people of the United States; and not the least of its good works was the lesson it taught as to the possibilities for good in public museums.

The objects which at the close of the Centennial Exhibition were given to the United States for its National Museum were of large intrinsic value, and were also very important from the fact that the necessity of caring for them led to the erection of a large building for the expansion of the Museum itself.

In the early years Professor Baird, then assistant secretary of the Institution, with two or three assistants, had been able to give all necessary attention to the care of the collections, and the Museum had never been formally divided into departments. When the reorganization was made in 1881, under the immediate care of the present Assistant Secretary, the diversity of the collections made it necessary to establish a number of departments, each of which was placed in charge of a curator.

There are now 28 organized departments and sections in the Museum, the larger number of which are in charge of specialists who receive no salary from the Museum. There are also 7 administrative offices.

SPECIAL EPOCHS IN THE HISTORY OF THE MUSEUM.

The history of the National Museum may be divided into three periods:

First, the period from the foundation of the Smithsonian Institution to 1857, during which time specimens were collected solely to serve as materials for research. No special effort was made to exhibit them to the public or to utilize them, except as a foundation for scientific description and theory.

Second, the period from 1857, when the institution assumed the custody of the "National Cabinet of Curiosities," to 1876. During this period the Museum became a place of deposit for scientific collections which had already been studied, these collections, so far as convenient, being exhibited to the public and, so far as practicable, made to serve an educational purpose.

Third, the present period (beginning in the year 1876), in which the Museum has undertaken more fully the additional task of gathering collections and exhibiting them on account of their value from an educational standpoint.

During the first period the main object of the Museum was scientific research; in the second, the establishment became a museum of record as well as of research; while in the third period has been added the idea of public education. The three ideas—record, research, and education—cooperative and mutually helpful as they are, are essential to the development of every great museum. The National Museum endeavors to promote them all.

It is *a museum of record*, in which are preserved the material foundations of an enormous amount of scientific knowledge—the types of numerous past investigations. This is especially the case with those materials that have served as a foundation for the reports upon the resources of the United States.

It is *a museum of research*, which aims to make its contents serve in the highest degree as a stimulus to inquiry and a foundation for scientific investigation. Research is necessary in order to identify and group the objects in the most philosophical and instructive relations, and its officers are therefore selected for their ability as investigators, as well as for their trustworthiness as custodians.

It is *an educational museum*, through its policy of illustrating by specimens every kind of natural object and every manifestation of human thought and activity, of displaying descriptive labels adapted to the popular mind, and of distributing its publications and its named series of duplicates.

In conclusion let us review what seems to have been definitely accomplished since the time of reorganization in 1881.

The definite steps of progress may be summarized as follows:

(1) An organization of the Museum staff has been effected, efficient

for present purposes and capable of expansion and extension as occasion may require, and many capable museum experts have been trained for work in other institutions.

(2) Through the agency of this staff the materials in the Museum, the accumulations of nearly half a century, have been examined, classified, and brought under control and arranged in such manner as to insure their safety and make them available for study.

(3) The collections have been increased nearly seventeen fold during the last fourteen years.

(4) A considerable beginning has been made toward the development of a well-labeled and effectually installed exhibition series, available for the instruction of the public.

(5) A thorough study of the organization and systems of classification in other museums throughout the world has been made, the results of which are beginning to appear in the work of the Museum staff and which will be made available for other institutions from time to time through the publications of the Museum.

(6) Many new methods of installation have been developed by experiment in the Museum, and the best and most available employed elsewhere have been adopted. Our new methods are being applied in many similar establishments at home and abroad.

(7) The art of taxidermy and the making of museum models has been advanced and dignified by the policy adopted in the treatment of the experts in the employ of the Museum.

(8) Science has been forwarded by the publication of some thousands of papers describing the materials in the Museum, while the work of specialists in the production of these papers has greatly enhanced the value of the national collections.

(9) Popular educational work of unquestioned value has been accomplished by participation in the great expositions in Philadelphia, Berlin, London, New Orleans, Cincinnati, Louisville, Madrid, and Chicago.

(10) Hundreds of thousands of named specimens have been distributed to other museums and to colleges and schools.

EXPECTATIONS OF FUTURE DEVELOPMENT.

That the United States must have a National Museum worthy of the dignity of the nation is self-evident.

Every country has a museum or group of museums in its capital city—centers of scientific and educational activity—the treasure-house of the people, filled with memorials of national triumphs in the fields of science, art, and industrial progress.[1]

These are legitimate objects of national pride, for upon the character of its museum and libraries intelligent persons, visiting a country, very

[1] Most of the older nations have museums devoted to their military achievements and triumphs, but our country has no need or desire to enter into this field of work.

properly base their judgment as to the nature and degree of the civilization of the people.

Washington may without question be made the seat of one of the greatest museums in the world. It may perhaps be neither practicable nor desirable to gather together in this city extensive collections of ancient mediæval art, but a representative series of such objects will undoubtedly grow up which will tend to educate the public taste, promote the study of the elements of art and the history of civilization, and forward the arts of design. This having been accomplished, attention should be directed mainly toward the exhibition of the geology and natural history of America and its natural resources, to the preservation of memorials of its aboriginal inhabitants, and the encouragement of the arts and industries of our own people.

It is evident that the National Museum of the United States will of necessity have features peculiar to itself, developed in response to the peculiar needs of the people of this continent. It should be remembered that the national collections of every principal European nation are divided into several groups, each under separate administration, though often within the general control of some central authority. In France, for instance, most of the museums are under the Ministry of Public Instruction, and in England, to a less extent, under the Department of Science and Art.

In the great capitals of Europe the public collections are scattered through various parts of the same city, in museums with distinctive names and independent in their organizations. Much of the work which should properly be done by such museums is omitted, because no one of them has seen fit to undertake it; while, on the other hand, much labor is duplicated, which is perhaps equally unfortunate—collections of similar scope and purpose being maintained in different parts of the same city. One of the chief objections to such division of effort is that much of the value of large collections in any department is lost by failure to concentrate them where they may be studied and compared side by side. In Washington, the national collections are all, without exception, concentrated in one group of buildings. The Army Medical Museum now occupies a building side by side with those under the control of the Smithsonian Institution, and this proximity, in connection with the long-established policy of cooperation between the two organizations, renders them, for all practical purposes, united in interest.

Although the appropriations from the public treasury for the maintenance of the National Museum are small, compared with those in several European countries, the value of objects given by private individuals is proportionately large. The actual value of such contributions for ten years past has not, it is estimated, fallen short of $20,000 a year, and in some years it has been greater.

Among important gifts may be mentioned the George Catlin Indian gallery, of inestimable value to the American historian and ethnologist; the collection of North American insects, given by Prof. C. V. Riley; the collection bequeathed in 1887 by the late Dr. Isaac Lea, of Philadelphia, containing, besides minerals and other objects, about 20,000 conchological specimens, and appraised by the State at $10,000; the collections of mollusks, gems, and precious stones presented by the Rev. L. T. Chamberlain and Mrs. Frances Lea Chamberlain; the large and valuable collections of African mammals, birds, etc., made and presented by Dr. W. L. Abbott and Mr. William Astor Chanler; the Bendire and Ralph collections of American birds' eggs, given to the Smithsonian Institution; the Lacoe collection of fossil plants, and the collection of the American Institute of Mining Engineers, for the transfer of which from Philadelphia to Washington a special appropriation was made by Congress.

Some exceedingly valuable collections in this country and in Europe have been bequeathed to the Smithsonian Institution, which have not yet come into its possession. It is estimated that within the past fifteen years individuals to the number of more than 2,000 have made gifts to the Museum to the value of $100 each or more.

The National Museum now contains nearly three and a half millions of objects.

The intrinsic value of such collections as these can not well be expressed in figures. There are single specimens worth hundreds, others worth thousands of dollars, and still others which are unique and priceless. Many series of specimens, which owe their value to their completeness and to the labor which has been expended on them, can not be replaced at any price. The collections at a forced sale would realize more than has been expended on them, and a fair appraisal of their value would amount to several millions of dollars.

One of the most striking features in the affairs of the Museum is the manner in which its collections are increasing. In 1895 the number of specimens is almost eighteen times as great as in 1882.

In the direct purchase of specimens but little money has been spent, less perhaps in fifty years than either France, England, Germany, or Austria expends in a single year on similar objects. The entire Museum is the outgrowth of Government expeditions and expositions, and of the gifts prompted by the generosity of the American people.

As might be supposed, a considerable proportion of the objects given are duplicates of material already on hand, and although these contributions can, with the utmost advantage, be used for distribution to museums and schools, they do not materially increase the value of the collections for study by specialists and for general educational purposes.

The need of a larger fund for the purchase of specimens is yearly becoming more manifest. Exceedingly important material is constantly

offered at prices very much below what it would cost to obtain it by collecting, and in many instances, when refused, it is eagerly taken by the museums and institutions of Europe.

The Museum in its present condition may be compared to a book from which pages here and there have been omitted, so that the narrative is disjointed and incomplete.

The museums of England are rich with the accumulations of centuries. The National Museum of the United States is young, and has enormous deficiencies in every department. In needs, more than any museum in Europe, the opportunity to increase its resources through purchase. The total amount expended for the purchase of specimens for the National Museum since 1889 has averaged less than $6,000 a year.

For the purchase of specimens for the South Kensington Museum, from 1853 to 1887, $1,586,634 was expended, or a yearly average of nearly $47,000.

Toward her other museums England is equally liberal. Exact statistics are not at hand, but it is quite within bounds to assert that her average expenditures for the purchase of new objects for museums in London is not less than $500,000 a year.

Our museum is the result of the activities of an enlightened Government. Through a thousand channels materials for the formation of a museum come into the possession of the Government, and out of such materials our museum has been built. A museum formed in this manner, however, suffers sooner or later from immense accumulations of objects of certain kinds and from the absence of others. This is true of the National Museum. At the outset no additions were unwelcome, and the expectation that all important deficiencies would be supplied, might properly be indulged in. As the years have passed, however, it has become more and more apparent that many of these deficiencies can be supplied only by purchase.

More striking present results might certainly have been attained by limiting the developments of the Museum to special fields. We have, however, had in view the future as well as the present, and no object has been refused a place in the Museum which is likely to be needed, even in the remote future, in the development of whatever grand museum plans the nation may ultimately be willing to promote.

B.—ORGANIZATION AND SCOPE OF THE MUSEUM.

The National Museum is under the charge of the Smithsonian Institution, and its operations are supervised by the Board of Regents of the Institution.

The Secretary of the Smithsonian Institution is by law the "keeper of the Smithsonian Museum," and the Assistant Secretary, by the usage of nearly fifty years, its executive head.

In the act of Congress passed in 1846, to establish the Smithsonian Institution, are contained the following provisions concerning the scope of the museum to be placed under its charge:

1. The act above referred to provides that "all objects of art and of foreign and curious research, and all objects of natural history, plants, and geological and mineralogical specimens belonging, or hereafter to belong, to the United States, which may be in the city of Washington," shall be delivered to the Regents of the Smithsonian Institution, and together with new specimens obtained by exchange, donation, or otherwise, shall be so arranged and classified as best to facilitate examination and study.

2. It provides that, in proportion as suitable arrangements can be made for their reception, these objects shall be delivered to such persons as may be authorized by the Board of Regents to receive them.

3. It provides that they shall be arranged in such order and so classified as best to facilitate their examination and study.

4. It provides that they shall thus be arranged in the building to be inclosed for the Institution.

5. It authorizes the Regents to obtain new specimens, by exchange of duplicate specimens and by gift, and directs also that they shall be appropriately classified and arranged.

The National Museum thus became the authorized place of deposit for all objects of art, archæology, ethnology, natural history, mineralogy, geology, etc., belonging to the United States or collected by any agency whatsoever for the Government of the United States, when no longer needed for investigations in progress.

The collections in the Museum are intended to exhibit the natural and industrial resources, primarily of the United States and secondarily of other parts of the world, for purposes of comparison.

The activities of the Museum are exerted especially in three directions:

1. The permanent preservation of the collections already in its possession, which depends chiefly upon the vigilance of the curators and the skill of the preparators.

2. The increase of the collections, which are acquired—

(1) From the various Government surveys and expeditions, in accordance with law;

(2) By gift from individuals, from other institutions, and from foreign Governments;

(3) By exchange for its duplicate specimens or for publications;

(4) By the efforts of officers of the Museum, who make collections in connection with their regular duties, or are detailed for special service of this nature;

(5) By purchase, when appropriations are made by Congress for that purpose.

3. The utilization of the collections, which is effected by exhibiting them to the public, and by encouraging investigations on the part of the officers of the Museum and other suitable persons, and facilitating the publication of the results; also by the distribution to other museums and educational institutions of duplicate specimens, which have formed the basis of scientific investigation, these being identified and labeled by the best authorities.

The collections of the National Museum are made up to a very large extent of the following materials:

1. The natural history and anthropological collections accumulated since 1850 by the efforts of the officers and correspondents of the Smithsonian Institution.
2. Collections which have resulted from explorations carried on more or less directly under the auspices of the Smithsonian Institution, or resulting from explorations carried on by the Smithsonian Institution in connection with educational institutions or commercial establishments.
3. Collections which have been obtained through the courtesy of the Department of State and the cooperation of United States ministers and consuls.
4. The collection of the Wilkes Exploring Expedition, the Perry Expedition to Japan, and other naval expeditions.
5. Collections made by the scientific officers of Government surveys, such as the Pacific Railroad Survey, the Mexican Boundary Survey, and the surveys carried on by the Engineer Corps of the United States Army and by officers of the Signal Corps of the United States Army stationed in remote regions.
6. Collections obtained by the United States Geological Survey, the United States Fish Commission, and those resulting from the activities of the United States Department of Agriculture and other departments of the Government.
7. The remnant of the collections of the old "National Institute."
8. The collections made by the United States to illustrate the animal and mineral resources, the fisheries, and the ethnology of the native races of the country on the occasion of the Centennial Exhibition at Philadelphia in 1876; the fishery collections displayed by the United States at the International Fisheries Exhibition at Berlin in 1880 and at London in 1883, and the collections obtained from various local expositions, as, for instance, the New Orleans Cotton Centennial Exposition in 1884 and 1885, the Cincinnati Exposition in 1887, and the World's Columbian Exposition in 1893.
9. The collections given by the Governments of the several foreign nations, thirty in number, which participated in the exhibition at Philadelphia in 1876.
10. The industrial collections given by numerous manufacturing and commercial houses of Europe and America at the time of the Philadelphia Exhibition and subsequently.
11. The materials received from museums in Europe and America in exchange for duplicate specimens.
12. Collections received as gifts, deposits, or in exchange from individuals, numbering usually from 1,000 to 1,500 each year.

The publications of the Museum consist of—

1. The Annual Report.
2. The Proceedings of the National Museum.
3. The Bulletin of the National Museum.
4. The series of circulars.

Papers by members of the Museum staff based upon the collections have been printed in every scientific periodical in the United States and in many of those of Europe.

RELATIONS OF THE MUSEUM TO THE SMITHSONIAN INSTITUTION.

The Smithsonian Institution, although it bears the name of a foreigner, has for half a century been one of the most important agencies in the intellectual life of our people. It has been a rallying point for the workers in every department of scientific and educational work, and the chief agency for the free exchange of books, apparatus of research, and of scientific intelligence between this and other countries. Its publications, which include more than two hundred volumes, are to be found in all the important libraries in the world, and some of them, it is safe to say, on the work-table of every scientific investigator. Its great library constitutes an integral and very important part of the national collection at the Capitol, and its Museum is the richest in existence in many branches of the natural history and ethnology of the New World. Many wise and enlightened scholars have given their best years to its service, and some of the most eminent men of science to whom our country has given birth, have passed their entire lifetime in working for its success.

Through these books, through the reputation of the men who have worked for it and through it, and through the good accomplished by its system of international exchange, by means of which within the past forty-three years nearly one and a half million packages of books and other scientific and literary materials have been distributed to every region of the earth, it has acquired a reputation at least as far-reaching as that of any other institution of learning in the world.

It is therefore representative of what is deemed in other lands the chief glory of this nation, for whatever may be thought in other countries of American art and literature, or of American institutions generally, the science of America is everywhere accepted as sound, vigorous, and progressive.

In the scientific journals of Great Britain and other European countries the reader finds most appreciative reviews of the scientific publications of the Smithsonian, the Museum, the Bureau of Ethnology, the Geological Survey, the Department of Agriculture, and the Fish Commission, and they are constantly holding up the Government of the United States as an example of what governments should do for the support of their scientific institutions.

It is surely a legitimate source of pride to Americans that their work in science should be so thoroughly appreciated by other nations, and it is important that the reputation should be maintained. Nothing can be more in consonance with the spirit of our Government, nor more in accord with the injunction of Washington in his Farewell Address, admiringly quoted by Sir Lyon Playfair in his address as president of the British Association for the Advancement of Science:

Promote, then, as an object of primary importance, institutions for the general diffusion of knowledge.

In proportion as the structure of a government gives force to public opinion, it should be enlightened.

No one has yet explained, except by conjecture, why James Smithson selected the United States as the seat of his foundation. He had no acquaintances in America, nor does he appear to have had any books relating to America except two. Rhees quotes from one of these (Travels through North America, by Isaac Weld, secretary of the Royal Society) a paragraph concerning Washington, then a small town of 5,000 inhabitants, in which it is predicted that "the Federal city, as soon as navigation is perfected, will increase most rapidly," and that, at a future day, if the affairs of the United States go on as prosperously as they have done, it will become the grand emporium of the West and rival in magnitude and splendor the cities of the Old World.

Inspired by a belief in the future greatness of the new nation, realizing that while the needs of England were well met by existing organizations, such as would not be likely to spring up for many years in a new, poor, and growing country, he founded in the new England an institution of learning, the civilizing power of which has been of incalculable value. Who can attempt to say what the condition of the United States would have been to-day without this bequest?

Well did President John Quincy Adams say:

Of all the foundations of establishments for pious or charitable uses which ever signalized the spirit of the age or the comprehensive beneficence of the founder, none can be named more deserving the approbation of mankind.

The most important service by far which the Smithsonian Institution has rendered to the nation has been that extended from year to year since 1846—intangible but none the less appreciable—by its constant cooperation with the Government, public institutions, and individuals in every enterprise, scientific or educational, which needed advice, support, or aid from its manifold resources.

There have been, however, material results of its activities, the extent of which can not fail to impress anyone who will look at them. The most important of these are the library and the Museum, which have grown up under its fostering care.

THE LIBRARY.

The library has been accumulated without aid from the Treasury of the United States. It has, in fact, been the result of an extensive system of exchanges, the publications of the Institution having been used to obtain similar publications from institutions of learning in all parts of the world.

The value of the books distributed since the Institution was opened must have been nearly $1,000,000, or nearly twice the original bequest of Smithson.[1] Many of the publications in each of these series are now out of print.

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[1] This estimate is based upon the prices which are charged for the books by second-hand dealers, as shown in their sale catalogues.

In return for these, and by purchase, it has received the great collection of books which forms its library and which is one of the richest in the world in the publications of learned societies, and therefore of inestimable value, containing, as it does, the record of actual progress in all that pertains to the mental and physical development of the human family, and affording the means of tracing the history of every branch of positive science since the days of the revival of letters until the present time. This library was, in 1865, deposited at the Capitol, as a portion of the Congressional Library.

The Smithsonian Collection, which includes more than three hundred thousand volumes and parts of volumes, constituting perhaps one-fourth of the National Library, is to be installed in a special hall of its own upon the main floor of the new Library Building. The rapidity with which it is increasing is indicated by the fact that in the last two years 67,589 titles were added.[1]

The Institution has probably done more toward building up a great library in Washington than would have been possible, had all its income been devoted strictly to library work, as was at one time seriously proposed.

The books are still deposited chiefly in the Capitol, but though their number has been so largely increased, year by year, now forming one of the most valuable collections of the kind in existence, they not only remain unbound, but in a far more crowded and inaccessible condition than they were before the transfer, a condition of affairs which it is hoped will soon be remedied.

The purchasing power of the publications of the Institution, when offered in exchange, is far greater than that of money, and its benefit is exerted chiefly in behalf of the National Library, and also to a considerable extent in behalf of the National Museum.

The amount expended during the past forty years from the private fund of the Institution in the publication of books for gratuitous distribution has been fully half as much as the original Smithson bequest.

These publications have had their influence for good in many ways; but, in addition to this, a library much more than equal in value to the outlay has, through their buying power, come into the possession of the nation.

In addition to all this, a large amount of material has been acquired for the Museum by direct expenditure from the private fund of the Smithsonian Institution. The value of the collections thus acquired is estimated to be more than equal to the whole amount of the Smithson bequest.

The early history of the Museum was much like that of the library. It was not until 1858 that it became the authorized depository of the

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[1]The working libraries of the National Museum and the Bureau of Ethnology are distinct from the general Smithsonian library and are separately administered. All of these are placed at the service of advanced students and specialists.

scientific collections of the Government, and it was not until after 1876 that it was officially reorganized as the National Museum of the United States.

But for the provident forethought of the Smithsonian Institution, the United States would probably still be without a reputable nucleus for a national museum.

The relations of the Museum to the system of popular lectures, for many years established in Washington, which replaces the old Smithsonian courses, once so influential, and the assistance which it affords each year to students of science, are referred to elsewhere in this report.

The Institution publishes many circulars giving information on scientific subjects, which are distributed gratuitously to those who write to make inquiries, and this system is being continually extended. In addition to this, a large correspondence is carried on with people in search of information on scientific topics. Probably not less than 7,500 letters a year go out to people who write seeking to know the name of some object or other scientific fact. Inquiries of this kind are always answered promptly and fully; and frequently, to intelligent inquirers, books are sent which will enable them to find out such names for themselves in future. This work has not only an educational value, but often a great economic importance as well, as, for instance, when some common mineral has been mistaken for one of value, some useless plant has been wrongly identified and supposed to be of service in medicine, or some harmless animal feared as noxious.

The publications of the Institution and its dependencies reach every State and almost every county in the United States. A careful study of the subject, recently made by the president of one of the scientific societies in Washington, seems to indicate that there are several States which are reached by no scientific publications whatever except those distributed gratuitously by the Government.

Speaking of the Smithsonian Institution proper, and not of the Museum or any other trust which it administers, it may be positively stated that in the execution of the trust of Smithson more has been given to the Government than has been received. The machinery of the Institution's action has been such that it has incidentally, in connection with its legitimate work for the increase and diffusion of knowledge, paid over to the Government the equivalent of much more than the whole original fund.

The present Secretary has pointed out that "although by the judicious administration of the Smithson fund nearly $1,500,000, the fruits of its investment, have been applied during the past forty years to the advancement of science and education in America (in addition to the principal, $911,000, larger now than ever before), it should be remembered that the unrestricted income of the Institution is less than

$60,000 a year, a sum much smaller in its power to effect results than ever in previous years."

Can the United States fail to recognize its obligation to supplement liberally this private contribution for public good, especially if it be borne in mind that, as Secretary Langley has shown, the Institution has left in perpetual charge of the nation, in the Museum alone, property acquired out of its private fund which is now more than equal in value to the whole amount of the Smithsonian bequest?

Every museum has its special characteristics growing out of its form of organization, its location, scope, and financial and other resources. The character of the National Museum is fundamentally affected by its connection with the Smithsonian Institution, its dependence upon Congress for appropriations annually, and the necessity, under existing laws, of its caring for all collections belonging to the Government.

Of the connection of the Museum with the Smithsonian Institution, it should be said that it is in the highest degree advantageous. It should be borne in mind that it is essentially a Smithsonian museum, since, especially in its earlier history, the Institution expended large sums of money in aiding explorations, with the distinct purpose of increasing the collections in certain directions, while of late years it has deposited all the valuable gifts and bequests of specimens it has received. It has had in addition, for nearly half a century, the use of the larger portion of the Smithsonian building, and, what is of paramount importance, the guidance and influence of the officers of the Institution, and the very valuable assistance of its numerous correspondents.

C.—THE WORK OF THE MUSEUM IN PUBLIC EDUCATION.

The work of the Museum, if it only performed the functions of an institution for scientific investigation, would be of sufficient value to justify its maintenance and extension. The Museum, however, not only performs these functions, but also does a very great deal to render the resources of science available to the public at large.

The National Museum is a treasure-house filled with materials for the use of investigators, and it is also an agency for the instruction of the people of the whole country.

In a recent address before the American Historical Association, I attempted to explain the idea of our work as follows:

(1) That public institutions of learning are not intended for the few, but for the enlightenment and education of the masses.

(2) That the public has a right to full participation in the results of the work of the scientific establishments which they are helping to maintain.

(3) That one of the chief duties of the officers of these institutions is to provide means by which such results may be presented in an attractive as well as an intelligible form.

No scientific institution is more thoroughly committed to the work of the diffusion of knowledge than is the Smithsonian Institution, and no department of its activity has greater possibilities in this respect than the National Museum.

The benefits of the Museum are extended not only to the specialists in its laboratories and to the hundreds of thousands of visitors from all parts of the United States who pass its doors each year, but to local institutions and their visitors throughout the country, through the distribution of the duplicate specimens in the Museum, which are made up into sets, accurately named, and distributed to schools and museums.

In the next annual report it will be shown how many hundred thousands of objects have been thus distributed during the past twenty years. Every museum in the United States has profited in this way, and by its system of exchange the Museum has, while enriching itself, contributed largely to the stores of every important scientific museum in the world.

Not only are specimens thus sent out, but aid is rendered in other ways. Within the last year many local museums in the United States were supplied with working plans of cases in use in the Museum, and similar sets of plans have been supplied within the past few years to national museums in other countries.

Not only do the people of the country at large profit by the work of the Smithsonian, as made available to local institutions, but also to a very considerable extent directly and personally.

The curator of each department in the Museum is expected to be an authority in his own line of work, and the knowledge of the whole staff of experts is thus placed, without cost, at the service of every citizen.

It is much to be regretted that many specialists, intent chiefly upon the study of certain scientific problems in which they individually are absorbed, are disposed to neglect the claims of the educated public to the enjoyment and instruction which museums afford. They do not hesitate to say that scientific museums should be administered for the benefit solely of persons engaged in research. Such men would find no welcome among us.

The experience of Europe, with its magnificent public museums and the history of the several expositions in the United States, should be quite sufficient to satisfy anyone who has studied the matter, that the museum is an educational power even more influential than the public library.

The venerable director of the South Kensington Museum, the late Sir Philip Cunliffe Owen, speaking from an experience of thirty-five years, not only in his own establishment, but in the work of building up the score of affiliated museums in the various provincial towns of Great Britain, remarked to the writer:

> We educate our working people in the public schools, give them a love for refined and beautiful objects, and stimulate in them a desire for information. They leave school, go into the pursuits of town life, and have no means provided for the

gratification of the tastes which they have been forced to acquire. It is as much the duty of the Government to provide them with museums and libraries for their higher education as it is to establish schools for their primary instruction.

In the same conversation Sir Philip insisted very strongly that a museum not actually engaged in educational work of some kind could not long survive, pointing to the great system of lectures and examinations connected with the Science and Art Department of the Council of Education, of which the South Kensington Museum was one of the chief agencies.

II.—SPECIAL TOPICS OF THE YEAR.

The changes already made in the form of the Annual Report, beginning with the volume for 1893, have been continued in this volume. It is believed that they have proved advantageous in many ways.

The most important innovation in Part I of this Report is the Appendix which relates to the statement concerning the Library of the National Museum. This consists of a complete list of all accessions to the library during the year 1894–95, but does not include books belonging to the Smithsonian library which have been withdrawn for the purposes of the National Museum.

The headings which follow indicate the topics which are thought to be of special importance in connection with both the scientific and administrative operations of the Museum during the year.

THE MUSEUM STAFF.

The number of organized departments and sections in the Museum is now 28. There are 7 administrative divisions.

Hon. Charles D. Walcott, Director of the United States Geological Survey, has been appointed honorary curator of all the paleontological collections, which are now embraced in the department of paleontology. The names of those in charge of the various sections of this department are mentioned in Appendix I.

Mr. J. E. Watkins was appointed curator of the technological collections in February, 1895.

In May Dr. J. M. Flint, U. S. N., was detailed by the Secretary of the Navy to serve again as honorary curator of the section of materia medica in the National Museum, thus relieving Medical Inspector Daniel McMurtrie, U. S. N.

Mr. F. W. True and Dr. Leonhard Stejneger were detailed in the spring of 1895 to report to the Commissioner of Fish and Fisheries for the purpose of accompanying an expedition to Alaska and the adjacent islands, with a view to studying the seal rookeries. They were temporarily transferred to the roll of the Fish Commission for this work.

On July 1, 1894, Mr. R. E. Earll was appointed editor of the Proceedings and Bulletins of the Museum. Later in the year he was appointed special agent on behalf of the Museum for the Cotton States and International Exposition to be held at Atlanta.

Dr. Theodore Gill and Dr. R. E. C. Stearns are now recognized as Associates in zoology, Dr. C. A. White, in paleontology, and Dr. R. W. Shufeldt, in comparative anatomy.

In January Dr. G. P. Merrill was detailed for special duty in the office of the Supervising Architect of the Treasury.

Mr. F. H. Knowlton resigned on July 5, 1894, although he is still connected with the Museum in an honorary capacity as custodian of mesozoic plants.

During the year Dr. J. N. Rose, of the Department of Agriculture, was appointed honorary assistant curator of the department of botany in the Museum, and Mr. R. S. Matthews was appointed an aid in the department of mammals.

On October 1, 1894, Dr. Walter Hough was appointed assistant curator of the department of ethnology; Mr. Charles W. Richmond was appointed an assistant in the department of birds on July 1 of the same year, and on November 1 Miss M. J. Rathbun, connected with the department of marine invertebrates, was made an assistant curator.

Mr. Charles T. Simpson was designated assistant in charge of the department of mollusks on May 17, during the absence in Alaska of Dr. Dall, honorary curator.

ACCESSIONS TO THE COLLECTIONS.

The accession entries relating to material received during the year have occupied Nos. 28312 to 29534, inclusive, giving a total of 1,223 separate lots. This is an increase of 62 over the preceding year, and any increase is the more remarkable from the fact that with very few exceptions no effort whatever has been made to induce persons to deposit their collections in the National Museum. This undesirable policy has been made necessary by the entire lack of additional exhibition space. The material received during the year has for the most part been placed in storage. It amounts to 127,324 specimens of all kinds. The three departments receiving the largest increases were prehistoric anthropology, mollusks, and insects. An effort has been made to obtain from the curators figures representing the number of specimens received during the year, as well as the total number of specimens in their departments on June 30, 1895. The appended tables, A and B, show the results. It is shown that there are now 3,406,855 specimens of all kinds in the custody of the Museum.

The table indicating in parallel columns the totals in the different departments at the end of each year since 1882 has been withdrawn, as it was found that without numerous footnotes it was impossible to account for the discrepancies which appeared to exist from a comparison of the totals of one year with another in the light of the table giving the number of specimens received in each department during the year. This last number added to the total for the previous year seldom gave the actual total for the year following, on account of specimens withdrawn for distribution and otherwise disposed of. On the other hand, as in

the department of geology, the total for a given year was liable to exceed the total for the previous year by more than the number representing the specimens obtained during the year. This might be readily accounted for by the fact that one large specimen upon its arrival would not unfrequently be broken into a large number of smaller ones. Hence the necessity for numerous explanatory notes arose, and for this reason the arrangement of these tables, as here given, will be adopted in future reports of the Museum.

A.—*Number of specimens received in 1894–95.*

Department.	Specimens received in 1894-95.
Arts and industries:	
Materia medica	5
Foods	3
Textiles	2
Animal products	.....
Graphic arts	70
Forestry	23
Transportation and engineering	6
Naval architecture	.....
Historical collections	298
Musical instruments	81
Modern pottery, porcelain, bronzes, etc	14
Physical apparatus	.....
Domestic animals	41
Ethnology	2,642
American aboriginal pottery	75
Oriental antiquities and religious ceremonials	171
Prehistoric anthropology	50,096
Mammals (skins and alcoholics)	1,484
Birds	5,499
Birds' eggs and nests	2,023
Reptiles and batrachians	1,093
Fishes	6,000
Mollusks	14,132
Insects	13,000
Marine invertebrates	2,378
Helminthological collection	*a* 106
Comparative anatomy:	
Mammals	250
Birds	
Reptiles and batrachians	
Fishes	
Paleontology:	
Vertebrate fossils	6,642
Invertebrate fossils—	
Paleozoic	
Mesozoic	
Cenozoic	
Fossil plants	
Recent plants	16,897
Minerals	1,053
Geology	3,240
Total	127,324

a Number of catalogue entries to June 30, 1895.

B.—*Number of specimens in the departments of the Museum on June 30, 1895.*

Department.	Specimens.
Arts and industries:	
Materia medica	6,322
Foods	1,114
Textiles	3,308
Fisheries	10,080
Animal products	3,028
Graphic arts	1,774
Forestry	749
Transportation and engineering	1,799
Naval architecture	802
Historical collections	30,296
Musical instruments	1,300
Modern pottery, porcelain, bronzes, etc.	3,597
Paints and dyes	197
Physical apparatus	366
Oils and gums	1,112
Chemical products	
Domestic animals	203
Ethnology	425,642
American aboriginal pottery	33,368
Oriental antiquities and religious ceremonials	4,316
Prehistoric anthropology	203,520
Mammals (skins and alcoholics)	14,432
Birds	78,824
Birds' eggs and nests	60,064
Reptiles and batrachians	35,308
Fishes	131,000
Mollusks	524,388
Insects	623,000
Marine invertebrates	522,378
Helminthological collection	*a* 106
Comparative anatomy:	
Osteology	15,078
Anatomy	
Paleontology:	
Vertebrate fossils	307,046
Invertebrate fossils—	
Paleozoic	
Mesozoic	
Fossil plants	
Recent plants	269,008
Minerals	26,484
Geology	66,846
Total	3,406,855

a Number of catalogue entries to June 30, 1895.

The following table shows the number of accession lots acquired by the Museum annually since 1881:

Year.	Accession numbers (inclusive).	Number of accessions during the year.
1881	9890–11000	1,111
1882	11001–12500	1,500
1883	12501–13900	1,400
1884	13901–15550	1,650
1885 (January to June)	15551–16208	658
1886	16209–17704	1,496
1887	17705–19350	1,646
1888	19351–20831	1,481
1889	20832–22178	1,347
1890	22179–22340	1,162
1891	22341–24527	1,187
1892	24528–25884	1,357
1893	25885–27150	1,266
1894	27151–28311	1,161
1895	28312–29534	1,223

A list of the accessions during the year covered by this report is printed as Appendix II. The list proper, which is arranged alphabetically by names of contributors, is accompanied by indexes showing the localities from which the specimens were obtained and the departments in the Museum to which they have been assigned.

TRANSFER OF THE NATIONAL HERBARIUM.

In 1869 the National Herbarium was transferred from the Smithsonian Institution to the Department of Agriculture. The reasons for this transfer are given under the head of "Review of work in the scientific departments." Within the last year, however, a formal communication was received from the Assistant Secretary of Agriculture proposing that the Herbarium be again housed by the Smithsonian Institution. The reasons for the desired change are given in the letter of the Assistant Secretary of Agriculture, dated July 24, 1894, which is reprinted in the chapter referred to above. The proposition was agreed to by the Smithsonian Institution, and the actual transfer of the Herbarium took place in September of the same year.

CATALOGUE ENTRIES.

The following statement shows the number of entries made in the catalogues of the various departments during the year ending June 30, 1895:

Department.	Entries.
Materia medica	5
Forestry	2
Foods	1
Textiles	2
Musical instruments	74
Transportation and engineering	5
Modern pottery, porcelain, bronzes, etc	12
Graphic arts	61
Domestic animals	36
Ethnology	1,270
American aboriginal pottery	17
Oriental antiquities and religious ceremonials	174
Prehistoric anthropology	2,775
Mammals	8,274
Birds	5,499
Birds' eggs and nests	567
Reptiles and batrachians	1,093
Fishes	2,053
Mollusks	3,546
Insects	161
Marine invertebrates	1,803
Helminthological collection	106
Comparative anatomy:	
Mammals	173
Birds	
Reptiles and batrachians	
Fishes	
Paleontology:	
Vertebrate fossils	283
Invertebrate fossils—	
Paleozoic	933
Mesozoic	7
Cenozoic	110
Fossil plants	460
Recent plants	670
Minerals	293
Geology	388
Total	30,853

APPROPRIATIONS FOR 1895–96.

The amount appropriated for the maintenance of the Museum for the fiscal year ending June 30, 1896, is $186,125. This is an increase of $3,025 over the appropriation for the year covered by this report. The items are as follows:

Preservation of collections	$143,225
Furniture and fixtures	12,500
Printing and binding	12,000
Heating and lighting	13,000
Postage	500
Rent of workshops	900
Repairs	4,000
Total	186,125

There was also an appropriation of $800 for fire protection for the Smithsonian and Museum buildings and the Astro-Physical Observatory.

EXCHANGES OF SPECIMENS WITH INSTITUTIONS AND INDIVIDUALS ABROAD.

The Museum has for many years maintained exchanges of specimens not only with domestic institutions but also, and chiefly, with foreign museums. This practice has enabled the Museum to dispose profitably of its duplicates, and at the same time to furnish museums and colleges in other countries with valuable American material for display or study. The Museum has exchange relations with almost every museum of importance in the world. Exchanges of specimens not infrequently lead to exchanges of publications also, and by this means the Museum library has received numerous accessions. Especially has this been the case since 1894, when a special effort was made to obtain from foreign museums publications which at that time were wanting on our shelves.

The exchanges of specimens with institutions at home are so indicated in the Accession List, which is printed as Appendix II. The exchanges with foreign museums and other institutions and individuals abroad are here briefly referred to.

FOREIGN EXCHANGES IN 1894–95.

Birds.—Birds' skins have been sent to Mr. A. Boucard, Oak Hill, Spring Vale, Isle of Wight, England, in continuation of exchanges.

From the La Plata Museum, La Plata, Argentina (Dr. Francisco P. Moreno, director), have been received birds' skins. Similar material has been transmitted in exchange.

Birds' skins have been forwarded to Mr. Victor Ritter von Tschusi zu Schmidhoffen, Hallein, Salzburg, Austria, in exchange for material already received.

Nineteen birds' skins have been sent to Rev. H. B. Tristram, The College, Durham, England, in continuation of exchanges.

Reptiles and batrachians.—Two specimens of *Menobranchus Latastei* have been received from Dr. John H. Garnier, Lucknow, Ontario, Canada.

From the Museum Senckenbergianum, Frankfort-on-the-Main, Germany, have been received, through Dr. O. Boettger, two lizards from China. A specimen of *Anniella pulchra* and two specimens of *Terrapene ornata* have been forwarded in return.

Fishes.—A cast of a fish has been sent to Dr. Ehrenbaum, director, Biological Station, Heligoland. Marine invertebrates have been asked for in return.

From the Indian Museum, Calcutta, India (Surg. Capt. A. Alcock, superintendent), have been received specimens of deep-sea fishes from

the Bay of Bengal. Eighty-three species of deep-sea fishes from the Atlantic and Pacific oceans have been transmitted in exchange.

Forty species of deep-sea fishes have been sent to Dr. L. Lortet, director of the Museum of Natural History, Lyons, France, for which material has been promised in return.

Mollusks.—British invertebrates have been received from the Manchester Museum, Manchester, England, through Mr. William E. Hoyle, in return for material already forwarded.

Dr. H. von Ihering, director, Paulista Museum, San Paulo, Brazil, has transmitted specimens of Unionidæ from Central and South America. Specimens of Unionidæ from the United States have been sent in return for material received and for additional specimens promised.

Specimens of *Anodonta fragilis* have been sent to Mr. J. F. Whiteaves, of the Geological Survey of Canada.

Insects.—From Mr. Edgar J. Bradley, Happy Valley Waterworks, South Australia, have been received two specimens of Honey Ant (*Camponotus inflatus*) from Alice Springs, MacDonnel Ranges, Central Australia. Foraminifera have been sent in return.

From Felippo Silvestri, Museo Civico di Storia Naturale, Genoa, Italy, has been received a collection of European myriapods, representing twenty-six species. North American myriapods have been sent in return.

From G. van Roon, Rotterdam, Holland, have been received thirteen species of Coleoptera from India and fifty-one species of Coleoptera from Europe. Similar material has been sent in return.

Marine invertebrates.—From Edgar J. Bradley, Happy Valley Waterworks, South Australia, have been received Foraminifera from South Australia. An equivalent in similar material has been sent.

A specimen of *Pentacrinus decorus* has been transmitted to Dr. L. Lortet, director of the Museum of Natural History, Lyons, France.

In continuation of exchanges, a small set of Holothurians has been sent to the Natural History Department of the British Museum, London, England.

From the Canterbury Museum, Christchurch, New Zealand, through F. W. Hutton, curator, have been received twelve specimens of dried crabs.

Mr. Charles Chilton, Port Chalmers, New Zealand, has transmitted specimens of Amphipoda and Isopoda from New Zealand in continuation of exchanges. A small set of Holothurians has been sent to the Indian Museum, Calcutta, India.

A small set of Holothurians has been sent to the K. K. Naturistorisches Hofmuseum, Vienna, Austria, Dr. Franz Ritter von Hauer, intendant.

A small set of Holothurians has been sent to the Museum of Natural History, Paris, France, Dr. A. Milne-Edwards, director; also a specimen of *Loxorhynchus grandis*.

A small set of Holothurians has been sent to the Zoological Museum, Copenhagen, Denmark (Dr. Christopher Lütken, director).

Helminthology.—Microscopic slides of parasitic worms have been sent to Prof. R. Blanchard, Paris, France, in exchange for material promised.

From Dr. A. Looss, Zoological Institute, Leipsic, Germany, have been received specimens of parasitic worms in exchange for material previously sent.

M. Stossich, Trieste, Austria, has transmitted parasitic worms, for which similar material has been returned.

From the University of Toronto, Toronto, Canada, through Prof. R. Ramsay Wright, have been received specimens of *Echinorhynchus capitatus*, for which material will be sent in return.

Parasitic worms have been sent to Dr. O. von Linstow, Göttingen, Germany.

Comparative anatomy.—Dr. H. Gadow, Cambridge, England, has transmitted a specimen each of Goatsucker (*Podargus*); Swift, *Cypselus apus;* Goatsucker (*Caprimulgus*), and Honey Creeper (*Certhiola*).

Paleontology.—A collection of characteristic North American fossil invertebrates and plants from the more important geologic terranes have been sent to the department of mines and agriculture, Sydney, New South Wales, in return for material already received.

The University of Caen, Caen, France, has transmitted, through Dr. A. Bigot, a fine plaster cast of *Pelagosaurus typus.* A collection of invertebrate fossils has been sent in return.

Diatomaceous earth has been received from Mr. R. Getschmann, Rixdorf, near Berlin, Germany, for which similar material has been returned.

Casts of vertebrate fossils have been received from the La Plata Museum, La Plata, Argentina (Dr. Francisco P. Moreno, director). Birds' skins have been sent in exchange.

From the Museum of Natural History, Paris, France (Dr. A. Milne-Edwards, director), have been received twenty-two casts of vertebrate fossils. A partial exchange has been sent.

Plants.—From the Museum of Natural History, Vienna, Austria (Dr. Aristides Brezina, director), have been received one hundred plants. An equivalent will be forwarded.

One thousand one hundred and thirty-six herbarium specimens of American plants have been sent to Lieut. Col. G. King, for the Royal Botanic Garden at Calcutta, India.

Prehistoric anthropology.—Two hundred archæological objects, also a collection of arrow and spear heads, have been sent to Mr. S. G. Hewlett, Eastbourne, Sussex, England, in return for material already received.

Archæological objects have been sent to Prof. H. H. Giglioli, director, Zoological Museum, Florence, Italy, in continuation of exchanges.

Stone implements and casts of prehistoric objects have been sent to Dr. Franz Ritter von Hauer, K. K. Naturistorisches Hofmuseum, Vienna, Austria.

From the La Plata Museum, La Plata, Argentina (Dr. Francisco P. Moreno, director), have been received ten pottery vessels. Material, in exchange, has been transmitted.

Ethnology.—Ethnological objects have been sent to Prof. H. H. Giglioli, for the Royal Zoological Museum, Florence, Italy, in continuation of exchanges.

Twenty-four ethnological objects from New Guinea have been received from Dr. A. C. Haddon, Inisfail Hills Road, Cambridge, England. Publications have been sent and other material will be forwarded in return.

Seven ethnological objects have been sent to Mr. Edward Lovett, Croydon, England, in continuation of exchanges.

A collection of objects obtained from the Indians of the western coast of North America has been sent, in exchange for material already received, to Rev. J. C. Calhoun Newton, Kwansei Gakuin, Kobé, Japan.

From the Royal Museum of Northern Antiquities, Copenhagen, Denmark, through Dr. Sophus Müller, have been received ethnological objects from East Greenland. Similar material has been sent in continuation of exchanges.

Ethnological objects have been sent to Sapporo Museum, Sapporo, Japan, in exchange for Aino objects received in 1889.

From Prof. Edward Tregear, Wellington, New Zealand, have been received five photographs of Maori houses.

Oriental antiquities.—Casts of the Temple Stone, Siloam inscription, and facsimiles of eleven Assyrian and Babylonian seals have been forwarded to Rev. J. C. Calhoun Newton, Kwansei Gakuin, Kobé, Japan, in return for material already received.

COOPERATION OF EXECUTIVE DEPARTMENTS OF THE GOVERNMENT.

The large annual increase in the national collections is due in no small degree to the aid which the Executive Departments of the Government have extended in various ways. Much valuable assistance has also been rendered by officials of the Departments who have found it practicable to perform certain work in the interest of the Museum without interfering with their official duties.

In the Department of State, Hon. W. W. Rockhill, who has made very liberal contributions to the collection in past years, is one of the warmest friends of the Museum. Mr. R. D. L. Mohun, of the Consular Bureau, has presented a large and valuable collection of ethnological objects from the Kongo region. Mr. Isaac Townsend Smith has been instrumental, in his capacity of consul-general of Siam, in forwarding to the Museum, in behalf of the King of Siam, through his Royal Highness Prince Devagongse Varaprakar, minister of foreign affairs, Bangkok, Siam, a Siamese edition of the sacred writing "Tripitaka"

of the southern Buddhists. Mr. R. M. Bartleman, chargé d'affaires of the United States at Caracas, Venezuela; Hon. C. H. Benedict, United States consul at Cape Town, Africa; Mr. N. C. Gram, United States consular agent at Dryefjord, Iceland, have also extended their friendly offices in increasing the collections.

The Museum is indebted to the Treasury Department for the prompt manner in which free entry has been granted for material obtained from many parts of the world. This courtesy has been extended over a long period of years.

Lieut. J. H. Scott and Mr. Sheldon Jackson, of the Revenue-Marine Service, have given their personal aid in adding to the collections.

Mr. Isaac Winston, of the United States Coast and Geodetic Survey, has also been a contributor.

In the War Department the same friendly spirit of cooperation has been manifested. The Quartermaster's Department has saved the Museum both time and money in connection with the transportation to Washington of heavy material from remote localities. Several Army officers have made contributions of interesting specimens to the Museum. Among these are Capt. P. H. Ray, Lieut. W. N. Hughes, Lieut. Wirt Robinson, Dr. Edgar A. Mearns, Dr. Timothy E. Wilcox, and Dr. C. E. Woodruff. In the same way the Museum is indebted to several officers of the Navy for addition to the collections—Rear-Admiral R. W. Meade, Lieut. Charles Emmerich, Lieut. C. H. Harlow, and Lieut. Herbert Winslow. In the latter part of May, 1895, Dr. James M. Flint was again assigned to duty in the Museum as honorary curator of the section of materia medica, and the renewal of his official connection with the Museum is a source of sincere gratification.

Under the Department of the Interior the principal accessions to the collections have been received through the Geological Survey. The material thence derived is alluded to in the List of Accessions (Appendix II). The following officers have extended personal assistance to the Museum during the year, either by collecting geological material or by cooperating with the geological work of the Museum: Mr. Whitman Cross, Dr. David T. Day, Mr. Frank Burns, Mr. J. S. Diller, Mr. G. H. Eldridge, Mr. S. F. Emmons, Mr. Arnold Hague, Mr. W. P. Jenney, Mr. F. H. Knowlton, Prof. S. L. Penfield, Mr. W. Sardeson, Mr. J. E. Spurr, Mr. T. W. Stanton, Mr. W. H. Turner, and Mr. T. Wayland Vaughan.

The Director of the Survey, Mr. Charles D. Walcott, has assumed charge of the paleontological department of the Museum, an arrangement which can not fail to redound greatly to the advantage of the latter. Dr. William H. Dall, Prof. Lester F. Ward, and Prof. F. W. Clarke, officers of the Survey, continue to act as honorary curators in the Museum, and to their active and earnest cooperation is due to a large extent the progress which has been made in the geological work of the Museum.

Dr. Z. T. Daniel, of the Indian Office, has made several valuable gifts of ethnological material to the Museum during the year. Dr. William J. Elstun, of the Pension Office, has also been a contributor.

Several collections have been transferred to the Museum by the Fish Commission. From the material received from this source a large number of specimens have been distributed to educational institutions throughout the country, over fifty collections having been sent out during the year.

Prof. B. W. Evermann, Dr. Hugh M. Smith, Mr. Charles H. Townsend, and Mr. C. W. Kendall have been personally instrumental in obtaining interesting material for the collections.

A number of important accessions have been received from the Department of Agriculture. Dr. C. Hart Merriam, Mr. L. O. Howard, Dr. A. K. Fisher, Messrs. E. W. Nelson, C. L. Pollard, and Theo. Pergande have rendered conspicuous assistance to the Museum. Prof. C. V. Riley, Mr. F. V. Coville, and Dr. C. W. Stiles have continued to act in an honorary capacity. Many botanical collections are received direct by the Department of Agriculture. These are in due time incorporated with the National Herbarium according to law. The circumstances which led to the transfer of the National Herbarium from the Department of Agriculture to the National Museum building are referred to at length in another place.

The Bureau of Ethnology, a branch of the Smithsonian Institution, has transmitted large and valuable collections of ethnological objects from Indian tribes in different sections of the country.

COLLECTORS' OUTFITS.

During the year outfits have been furnished to collectors as follows: To Mr. A. W. Ridgway, Point Lookout, Md.; to Capt. James P. Hare, Avery, La.; to Dr. Edgar A. Mearns, San Diego, Cal.; to Mrs. Constance McElroy, Livingston, Guatemala; to Mr. F. W. True, U. S. National Museum, for collecting in Alaska; to Mr. Frank C. Dennis, Livingston, Guatemala; to Rev. D. W. Snyder, Luebo, Congo Free State; to Mr. F. W. Urich, honorary secretary of the Trinidad Field Naturalists' Club, Port-of-Spain, British West Indies; to Mr. O. Bangs, Micco, Brevard County, Fla.; to Mr. R. S. Matthews, U. S. National Museum, for collecting in West Virginia; to Prof. P. H. Rolfs, Florida Agricultural College, Lake City, Fla.; to Lieut. Wirt Robinson, steamship *Venezuela*, Brooklyn, N. Y., and to Mr. William Palmer, U. S. National Museum, for use during a collecting trip in Florida.

DEVELOPMENT AND ARRANGEMENT OF THE EXHIBITION SERIES.

The changes in the exhibition halls of the Museum have not been very extensive during the year. Most of the alterations were made with a view to exhibiting to better advantage the collections previously

installed, or for the purpose of making room for small, though in some cases important, collections or individual objects recently acquired.

The collection illustrating the religions of eastern Asia (Brahmanism, Buddhism, and Shintoism) was installed and labels prepared for many of the objects. The collection of Assyrian seals and other small casts is now installed in four Kensington cases, and a number of objects relating to the Greco-Roman religion have also been placed upon exhibition. The casts of reliefs from Constantinople have been hung on the walls of the east hall, next to the rotunda. The collections of oriental antiquities and religious ceremonials now occupy two alcoves in the east hall and two in the west hall of the Museum building.

That portion of the historical collection which is on exhibition is in good condition, but there is still considerable work to be done in the way of labeling the specimens. Several pieces of apparatus used by Professor Henry in connection with his researches in electro-magnetism, which have for many years been in the custody of the Smithsonian Institution, were placed upon exhibition in the Museum during this year, together with other pieces of apparatus deposited by Miss Mary A. Henry. A special case is devoted to this apparatus. A rearrangement of the specimens in the boat hall is contemplated. On account of the limited space available for exhibition purposes, the collections illustrating the various stages in the development of the sewing machine and the typewriter have been placed in storage.

The exhibition series of the department of paleontology in the southeast court has been rearranged, and the court again opened to the public. The former crowded condition of the room has been relieved, to some extent, by the removal of a portion of the slope-top cases. Thirty-two of these cases still remain, and in these is installed the collection of invertebrate fossils. The fossil plants and vertebrates are arranged in the wall cases. A few additional vertebrate fossils have been placed upon exhibition during the year, and a number of large casts secured to the walls or placed upon the tops of the wall cases. The collection of fossil insects occupies one flat-top case, and the large slabs of tracks have been placed upon screens in the corners of the hall.

The systematic collection of rocks has been entirely rearranged and the labels of the building-stone collection renewed. Over 200 photographs were mounted and placed upon exhibition in the department of geology. Owing to lack of space, the permanent increase in the exhibition series in this department has been small. Better specimens are, however, being constantly substituted for less desirable ones. The mineral collection is being supplied as rapidly as possible with individual and group labels. The cases have been numbered and an "arrangement label" has been prepared and put up, showing the scheme of arrangement of the collections. An educational series is in course of preparation.

The exhibition hall of the department of mammals has been entirely

rearranged and rendered more attractive. In carrying out the new arrangement the position of all of the movable cases was changed. The appearance of that portion of the collection installed in the wall cases is seriously diminished by the fact that the mounted specimens are so close together that the light is obstructed, and in many cases little more than the heads and shoulders of the specimens can be seen. The Audubon lithographic pictures of mammals, recently purchased by the Museum have been hung in the office of the curator, temporarily. The series of interlocked antlers has been transferred to the department of comparative anatomy to be incorporated in the osteological collection. Labels have been made for the porpoises arranged on top of the wall cases in the south hall. In the department of birds the exhibition series is in good condition. A limited number of badly mounted specimens have been remounted, and other specimens not suitable for exhibition have been replaced by better ones. Several months were spent in renovating the entire mounted collection, each specimen being subjected to a process of cleaning, which, it is believed, will result in a material improvement in the appearance of the collection. A few specimens have been added to the exhibition series in the department of comparative anatomy during the year, and the entire exhibit is in good condition. The exhibition space in this department has been increased to a limited extent by placing cases between the piers above the wall cases. In the department of fishes the condition of the exhibition series remains the same as last year. In the department of marine invertebrates five old-fashioned flat ebony cases have been replaced by mahogany cases, and the location of some of the other cases has been changed. The collection of tree snails from the Philippine Islands has been placed upon exhibition in the department of mollusks.

The exhibition series in the department of ethnology is embraced in two groups—the material actually on exhibition and the exhibition series returned from the World's Columbian Exposition. Owing to lack of room, the latter has been temporarily placed in storage. The work of setting up in the northwest court a special exhibit illustrating the ethnology of the Pueblos of New Mexico and Arizona has been carried on during the year. The change referred to last year in the arrangement of the exhibition hall of the department of prehistoric anthropology has been completed. All of the objects, contained in fifty-two cases, have been rearranged geographically by States and foreign countries. Twelve cases, containing objects made by or belonging to prehistoric man, have also been rearranged. In the wall cases on the north and west sides of the hall the objects from Mexico, the West Indies, and Central and South America have been installed. The Pacific Coast objects have been segregated and installed in a case by themselves, and the mummies are now exhibited in the wall case on the south side of the hall. Two additional shelves have been provided in

each alcove case, and about 900 specimens of mound pottery placed thereon. Large cases of pottery from Peru, Brazil, and the Arkansas mounds have been placed in the foyer of the hall. A case containing a group of Indian figures, and representing a quarry workshop, has also been installed. A large number of paintings, drawings, lithographs, and photographs of prehistoric objects have been hung on the walls of the hall; also a map showing the linguistic stocks of North America, and a chronological map showing the distribution of aboriginal mound districts in the United States. Many additional labels have been provided for the specimens in the cases.

LABELS.

During the year there were printed 1,870 forms of labels, including 171,544 copies. Of this number 242 forms, representing 82,568 labels, were printed at the Museum. There were also printed on the Museum press 57,466 envelopes, copies of blanks, etc., representing 28 forms, and at the Government Printing Office 558,100 copies, representing 29 forms.

LIBRARY.

The accessions to the library during the past year have exceeded those of any previous year since its organization. Dr. Cyrus Adler, librarian, states that there were received by gift, purchase, and exchange 1,035 volumes, 2,255 parts of volumes, and 3,311 pamphlets, making a total of 6,601. This is an increase of more than 2,200 over the receipts for the year ending June 30, 1894. A complete list of the accessions by gift and exchange is printed in Appendix III. There were retained for the use of the Museum from the accessions to the library of the Smithsonian Institution 133 books, 619 pamphlets, and 7,451 parts of periodicals. About 1,600 books were bound during the year, two-thirds of this number belonging to the Museum and the remainder to the Smithsonian deposit.

The number of books borrowed was 6,110. A large number of books in the custody of the sectional libraries, which would have been recalled earlier but for the overcrowded condition of the library, have now been gathered in. This makes the number of books returned exceed by about 3,000 the number of books lent during the year.

Extensive additions have been made to the series of publications of museums, of State agricultural colleges and experiment stations, scientific publications of the United States Government, and publications relating to early travel in North America. For the purpose of accommodating these publications, and to relieve to some extent the crowded condition of the library, a set of bookshelves has been constructed at the west end of the lecture hall.

The librarian states that the Museum is under obligations to the Library of Congress for the same hearty cooperation which has been manifested in the past.

The library has been freely consulted by members of the Museum staff, by officials connected with several of the other scientific bureaus of the Government, by members of the various scientific societies of Washington, and by other specialists not connected with the Museum.

A large amount of time has been devoted to a new classification of the books and pamphlets. This work was nearly completed at the close of the fiscal year, notwithstanding the large increase of work in matters of routine. The transfer of the catalogue to cards of the standard library form was commenced in the early part of the year. Up to the present time about 4,500 cards belonging to this catalogue have been filled out.

There are now 21 sectional libraries. These are designated as follows:

1. Administration.
2. Birds.
3. Botany.
4. Comparative anatomy.
5. Ethnology.
6. Fishes.
7. Geology.
8. Helminthology.
9. Historical collections.
10. Insects.
11. Mammals.
12. Marine invertebrates.
13. Materia medica.
14. Mesozoic fossils.
15. Mineralogy.
16. Mollusks.
17. Oriental antiquities and religious ceremonials.
18. Paleobotany.
19. Photography.
20. Prehistoric anthropology.
21. Reptiles.

CONTRIBUTIONS TO SCIENTIFIC LITERATURE.

A list of the papers, by officers of the Museum and other specialists, based upon Museum material, and published during the year, will be found in Appendix IV. These papers, which are 278 in number, were written by 80 different authors, 40 of whom are connected with the Museum. The following table shows the subjects to which these papers relate:

Subject.	By Museum officers.	By other investigators.	Total.
Administration	1	.....	1
American aboriginal pottery	1	.....	1
Anthropology	2	.....	2
Archæology	4	.....	4
Biography	3	.....	3
Biology	9	.....	9
Birds	35	13	48
Botany	8	3	11
Chemistry	1	.....	1
Comparative anatomy	9	.....	9
Ethnology	9	.....	9
Fishes	23	1	24
Forestry	2	.....	2
Fossils	17	.....	17
Geology	9	1	10
Graphic arts	1	.....	1
Historical collections	1	.....	1
Insects	11	25	36

Subject.	By Museum officers.	By other investigators.	Total.
Mammals	8	1	9
Marine invertebrates	5	8	13
Materia medica	1	.....	1
Mineralogy	4	1	5
Mollusks	23	.....	23
Oology	2	.....	2
Oriental antiquities	1	.....	1
Parasites	16	.....	16
Religious ceremonial	1	.....	1
Reptiles and batrachians	8	3	11
Taxidermy	1	.....	1
Transportation and engineering	1	.....	1
Miscellaneous	5	.....	5
Total	222	56	278

PUBLICATIONS.

The bill relating to the printing, binding, and distribution of public documents approved January 12, 1895, authorizes the printing of 10,000 copies of the Smithsonian Report (of which Part II is the volume devoted to the operations of the National Museum), 1,000 of which shall be for the use of the Senate, 2,000 for the House of Representatives, 5,000 for distribution by the Smithsonian Institution, and 2,000 for the National Museum. The quota allotted to the Museum is quite insufficient to supply even the large public and scientific libraries throughout the world, not to mention the various departmental and bureau libraries of the Government, consular officers, collaborators, and contributors to the collections in the Museum, and the numerous applications from individuals and institutions not on the mailing lists. The Smithsonian Institution has, however, kindly placed at the disposal of the Museum a portion of its allotment, thus making possible a more satisfactory distribution than could otherwise have been effected.

Requisitions for printing Volume XVII of Proceedings and Bulletin 48 have been sent to the Printing Office.

The Museum Report for 1892, constituting Part II of the Report of the Smithsonian Institution, was published during the year. The separate papers in the appendix to the Report were issued in pamphlet form before the close of the last year. The volume for 1893 is now going through the press, and its receipt from the printer at an early date is expected. The separate papers (Nos. 976–1032) in Volume XVII of Proceedings have, with one exception, been distributed. The bound volume will soon be ready for distribution. Advance sheets of a paper by M. L. Linell, describing a new species of Golden Beetle from Costa Rica, and a note on two new species of beetles of the Tenebrionid genus *Echocerus*, by F. H. Chittenden, were published, in order to secure priority of description to the authors. The papers will be reprinted as Nos. 1040 and 1041 in Volume XVIII of the Proceedings. The titles of

all papers distributed in separate form during the year will be found in Appendix V. Manuscripts of 35 papers to be included in Volume XVIII have been forwarded to the Printing Office. These include 14 papers relating to fishes, 9 relating to birds, 4 relating to mollusks, and 8 papers on other subjects.

Bulletin No. 48, "Contribution toward a Monograph of the Insects of the Lepidopterous Family Noctuidæ of Boreal North America; A Revision of the Deltoid Moths," by John B. Smith, has been published. The following additional parts of Bulletin No. 39 are now in the folding room: Part H, "Directions for collecting minerals," by Wirt Tassin; Part I, "Directions for collecting rocks and for the preparation of thin sections," by George P. Merrill; Part J, "Directions for collecting specimens and information illustrating the aboriginal uses of plants," by Frederick V. Coville; Part K, "Directions for collecting and preparing fossils," by Charles Schuchert. An extra edition of Part A, "Directions for collecting birds," by Robert Ridgway, has been printed at the expense of the Museum allotment, to supply the extraordinary demand for this pamphlet. Considerable progress has been made with Bulletin 47, "The Fishes of North and Middle America," by David Starr Jordan and Barton W. Evermann, and the volume will doubtless be ready for distribution during the next fiscal year. The manuscript for the second volume of the work is now in preparation. The bulletin will be accompanied by an atlas of plates.

The second of the series of Special Bulletins in quarto form, entitled "Oceanic Ichthyology," relating to the deep-sea and pelagic fishes of the world, by G. Brown Goode and Tarleton H. Bean, the preparation of which was noticed in the Report for last year, has been set in type, and will shortly go to press. The preparation of the third of the series of Special Bulletins, being the second volume of "Life Histories of North American Birds," by Charles E. Bendire, has rapidly progressed, and the bulletin is already partially in type. This, as well as the preceding, will also be published in the Smithsonian Contributions to Knowledge.

Four circulars have been issued by the Museum during the year, Nos. 43 to 45, requesting the transmission of publications of scientific bodies and educational establishments to the Museum library and inviting the contribution of authors' separates and reprints, and No. 46, soliciting the cooperation of students and collectors in forwarding plants found in the District of Columbia, and notes concerning them, for incorporation in a proposed revised edition of Bulletin 22, by Lester F. Ward, entitled "A Guide to the Flora of Washington and Vicinity," which appeared in 1881.

MATERIAL LENT FOR INVESTIGATION.

As in previous years, a considerable quantity of material has been sent to specialists for examination and study. Some of the more important transactions of this character are here mentioned.

A number of specimens of small mammals were transmitted to Dr. Edgar A. Mearns, U. S. A., Fort Myer, Va. A portion of this material belonged to the Mexican Boundary collection, and much of it was obtained by Dr. Mearns himself. A specimen of Florida shrew was transmitted to Mr. Frank M. Chapman, of the American Museum of Natural History, New York City, and to Mr. G. S. Miller, jr., of the Division of Ornithology and Mammalogy of the Department of Agriculture several specimens of alcoholic bats were sent, to be used in the preparation of a paper on the genus *Vespertilio*. Mr. S. N. Rhoads, of the Academy of Natural Sciences of Philadelphia, made use of specimens of the genera *Synaptomys* and *Geomys* in connection with the preparation of papers on these genera.

Seven specimens of Palm Warblers were sent to Mr. Witmer Stone, of the Academy of Natural Sciences of Philadelphia, to aid in the identification of specimens in his possession; also specimens of shore birds, for illustration in a forthcoming work by Mr. D. G. Elliot. Five specimens of *Atlapetes pileatus* and two specimens of *Parus atricapillus occidentalis* were sent to Mr. William Brewster, Cambridge, Mass., the former for use in connection with the determination of specimens in his possession and the latter for comparison. Mr. Osbert Salvin, London, England, obtained the loan of several specimens of Procellaridæ, to be used in connection with the preparation of the British Museum catalogue of that family. A specimen of *Harporhynchus cinereus* was transmitted to Mr. A. W. Anthony, San Diego, Cal., for comparison with a new species discovered by him.

Specimens of alcoholic birds were sent to Mr. Hubert Lyman Clark, Pittsburg, Pa.; skulls of reptiles to Prof. E. D. Cope, of Philadelphia; viscera of various animals to Dr. C. S. Huntington, Columbia College, New York City, and the type of *Aceratherium occidentale* to Prof. H. F. Osborn, of the American Museum of Natural History, New York City, for use in connection with his studies of the extinct species of the rhinoceros in North America.

The various orders represented in the large collection of insects received from the Japanese Commission to the World's Columbian Exposition were transmitted to specialists for study and report. The parasitic Hymenoptera were sent to Mr. William H. Ashmead, of the Department of Agriculture; the Orthoptera to Prof. Lawrence Bruner, Lincoln, Nebr.; the Odonata to Mr. P. P. Calvert, of the Academy of Natural Sciences of Philadelphia; and the Lepidoptera to Dr. W. J. Holland, of Allegheny, Pa. The East African Orthoptera, collected by Messrs. Abbott and Chanler, and a few West African species, were sent to Prof. Lawrence Bruner, and a series of Odonata, collected in Kashmir by Dr. Abbott, was sent to Mr. Calvert. The Museum collection of the Dipterous family Phoridæ was submitted for identification to Mr. D. W. Coquillett, of the Department of Agriculture. To Dr. William G. Dietz, of Hazelton, Pa., a select series of the Coleopterous tribe Ceutorrhynchini was transmitted for use in connection

with the preparation of a monograph. In addition to the specimens mentioned above as having been sent to Dr. W. J. Holland, a collection of Lepidoptera from the Tana River region, East Africa, and a small collection from islands off the east coast of Africa were transmitted for study and report. The sawflies in the Japanese collection were sent to Mr. C. L. Marlatt, of the Department of Agriculture, for the same purpose. To Prof. Jerome McNeill, Fayetteville, Ark., certain genera of the family Acridiidæ were sent for use in monographic work. A number of Noctuids were forwarded to Prof. J. B. Smith, of New Brunswick, N. J., for identification; there were also transmitted to him some microscopic slides of certain parts of the mouth of the Diptera for special study.

Material was transmitted to Dr. G. Baur, of the University of Chicago, for use in connection with the preparation of his work on the Testudinata of North America, and to Mr. John Denburg, of the California Academy of Sciences, six specimens of lizards were sent for comparison with California species.

Specimens of fishes of the genera *Notorhynchus*, *Heterodontus*, *Callorhynchus*, *Chimæra*, *Polyodon*, *Scapirrhynchus*, and *Bdellostoma* were sent to Dr. Bashford Dean, of Columbia College, New York City, for study. Four specimens of *Cottus Bairdi punctulatus* were lent to Dr. C. H. Gilbert, of the Leland Stanford Junior University; also one specimen of *Icelus euryops*.

A large collection of Plumularidæ was sent to Prof. C. C. Nutting, of the State University of Iowa, for study in connection with the preparation of a monograph of the Hydroids. A large collection of sponges from the North Atlantic was sent to Mr. Lawrence M. Lambe, of the Geological Survey of Canada, to be used in connection with a special study of the sponges from the coast of the Canadian Provinces. A collection of mounted Alaskan sponges was also forwarded to Professor Lambe for identification, and a set of duplicates was transmitted to him in exchange for his services in identifying a collection transmitted in the preceding fiscal year. The Museum collection of leaches was sent to Mr. J. Percy Moore, of the University of Pennsylvania, for monographic work. To Mr. Alexander Agassiz, Cambridge, Mass., was transmitted a small collection of Solenogasteridæ, to be studied by Mr. C. A. Kofoid in connection with the material of that group collected by the *Albatross* during the cruise to the Galapagos Islands in 1891. A small collection of fresh-water sponges was sent to Prof. Edward Potts, of Philadelphia, for identification. Seven lots of crayfishes were sent to Dr. Walter Faxon, of the Museum of Comparative Zoology, Cambridge, Mass.; also three specimens of crabs. Prof. A. E. Verrill, of the Peabody Museum, New Haven, obtained the loan of five specimens of starfishes from the Atlantic coast. Two specimens of crabs were sent to Mr. Samuel J. Holmes, of the University of California.

A package of small shells from Mingusville, Mont., was sent to

Dr. V. Sterki, of New Philadelphia, Ohio, for study. A collection of Miocene corals from America and Jamaica was sent to Prof. Henry S. Gane, of Johns Hopkins University, Baltimore, who had in view the preparation of a paper on this material. A number of fossils from the Maryland Eocene formation were transmitted to Prof. W. B. Clark, of Johns Hopkins University, who desired to use them in the preparation of illustrations. Four species of land shells from the Philippine Islands were sent to Mr. H. A. Pilsbry, of Philadelphia, for study.

Material relating to games and gambling has been sent to Mr. Stewart Culin, director of the Museum of Archæology and Paleontology of the University of Pennsylvania. A paper by Mr. Culin, entitled "Mancala, the National Game of Africa," is printed in Part II of the Report for 1894. To Mr. William Dinwiddie, of the Bureau of Ethnology, were sent a number of specimens of rude implements, also a series of pottery and pottery tools, for use in connection with an address to be delivered before the Anthropological Society of Washington on the art of pottery-making among the Papago Indians. A series of prehistoric drills and specimens of drilled stone were lent to Mr. J. D. McGuire for study.

To Prof. John M. Clarke, of Albany, N. Y., fossils were transmitted for examination. Twenty-eight specimens, including twelve species of Echinoids, were lent to Prof. W. B. Clark, of Johns Hopkins University, for use in connection with the preparation of a monograph of the fossil Echinoids of America. To Prof. J. F. Whiteaves, of the geological survey of Canada, fifty-four specimens of fossils from Manitoba and the northwest were sent for study and identification. Professor Whiteaves is at work on a monograph of the fossils of this region.

A number of herbarium specimens were transmitted to Prof. N. L. Britton, of Columbia College, New York City. Specimens of the genus *Physalis* were sent to Prof. C. E. Bessey, Lincoln, Nebr., and twenty specimens of *Astragalus* to Mr. M. E. Jones, of Salt Lake City. Prof. J. M. Coulter, of Lake Forest University, Lake Forest, Ill., obtained the loan of specimens of the Amarantaceous genera *Guilleminea*, *Alternanthera*, *Gossypianthus*, *Celosia*, *Iresine*, *Gomphrena*, *Cladothris*, *Frœlichia*, *Solanum*, and *Collinsia*. A number of specimens, including twelve miscellaneous Umbelliferæ, were sent for study to the director of the Royal Botanic Gardens, Kew, England, and to Dr. B. L. Robinson, Gray Herbarium, Cambridge, Mass., a number of mounted specimens were lent for study in connection with the preparation of a paper on the "Synoptical Flora of North America." Specimens of the genus *Agave* were sent to Prof. William Trelease, director of the Missouri Botanical Garden, St. Louis, and specimens of the genus *Plantago* to Prof. Stanley Coulter, Purdue University, Lafayette, Ind.

A small collection of rocks from the Bear Paw Mountain region was lent for study to Mr. Walter H. Weed, of the U. S. Geological Survey.

A number of blue prints and photographs of standard museum cases have been sent out during the year to colleges and museums desiring to adopt the styles in use in the National Museum.

WORK OF STUDENTS AND INVESTIGATORS AT THE MUSEUM.

A number of persons have availed themselves of the privilege of examining Museum material in the offices and laboratories of the curators. These include students, specialists from various parts of the country who had come to Washington for the purpose of consulting the collections, and officers of several of the scientific bureaus of the Government.

Dr. Edgar A. Mearns, U. S. A., spent considerable time in the department of mammals studying the large collection from the Mexican boundary which he had been foremost in gathering in connection with his work on the survey. Many specimens were also sent to him at Fort Myer, Va., for examination and comparison. He has in view the publication of an extensive report on the geographical distribution and relationships of the various forms inhabiting the southern border of the United States. The officers of the Division of Ornithology and Mammalogy of the Department of Agriculture have had free access to the mammal collections.

Mr. J. M. Stowell, of the Leland Stanford Junior University, visited the Museum during the summer of 1894, for the purpose of studying the methods of taxidermy employed here.

The committee on classification and nomenclature of the American Ornithologists' Union held its sessions in the office of the curator of the department of birds, and made daily use of the study series, thereby deciding numerous questions of importance in connection with the Union's "Check List of North American Birds." Mr. Charles B. Cory, of Boston, Mass., consulted the collections in connection with the identification of species of *Elainea* from San Domingo. Mr. William Brewster brought to the Museum a number of specimens of North American and Mexican birds, whose correct determination necessitated a comparison with types and other specimens in the Museum. Dr. A. K. Fisher, of the Department of Agriculture, examined specimens on various occasions, mainly in connection with his work at the Department. Maj. Charles E. Bendire, honorary curator of the department of oology in the Museum, frequently consulted the collections of birds in connection with the identification of specimens, and also to aid him in fixing the geographical range of species included in the second volume of his "Life Histories of North American Birds." Mr. Henry C. Oberholser, of the Department of Agriculture, has almost daily consulted the study series in connection with special investigations which he is conducting, and also with a view to obtaining a more detailed knowledge of the North American species and subspecies of birds. Mr. R. P. Currie has made similar use of the collections. Mr. E. E. Armstrong did considerable volunteer work in the department of birds, at the same time improving the opportunity to study the collections.

Dr. G. Baur, of the University of Chicago, who was engaged for a time

in the study of the Testudinata, and Prof. E. D. Cope, of Philadelphia, were given facilities for study in the laboratory of the department of reptiles, in connection with the preparation of his forthcoming work on "The Snakes and Lizards of North America," which will be published as a bulletin of the Museum.

Prof. C. W. Johnson, of the Wagner Free Institute of Science, Philadelphia, visited the Museum several times to consult the collection of Stratyomyidæ, and Prof. Lawrence Bruner, of Lincoln, Nebr., consulted the collections of Lepidoptera and Hymenoptera for the purpose of identifying western species. Mr. Ellison A. Smith, professor of biology at the Virginia Agricultural and Mechanical College, Blacksburg, Va., consulted the collection in connection with the identification of exotic butterflies, and Prof. J. B. Smith, of New Brunswick, N. J., visited the Museum for the purpose of examining material in connection with his monographic work on the Noctuids. Mr. C. H. Roberts and Mr. Aug. Merkel, of New York City, and Capt. Henry John Elwes, president of the Entomological Society of London, also consulted the collections in the department of insects.

During the present year, as heretofore, Dr. Theodore Gill made use of the collections of fishes in connection with his studies of families and genera. Mr. Barton W. Evermann compared specimens in the collection with material obtained by field parties of the U. S. Fish Commission.

During the summer of 1894, Prof. C. C. Nutting, of the State University of Iowa, spent several weeks in the laboratory of the department of marine invertebrates studying the large collection of Hydroids, especially the West Indian forms. Dr. R. P. Bigelow spent a few days at the Museum in revising his report on the Stomatopoda. Prof. A. E. Verrill has continued his studies at New Haven of the Fish Commission material from the Atlantic coast north of Cape Hatteras, and especially of the echinoderms.

Dr. Albert Hassall, of the Bureau of Animal Industry, Department of Agriculture, has made use of the Museum collections in connection with his studies of scientific and economic helminthology.

In the department of mollusks, Prof. William B. Clark, of Johns Hopkins University, studied the Tertiary fauna of Maryland; Mr. Charles W. Johnson, of the Wagner Free Institute of Science, Philadelphia, studied the Tertiary fauna of North Carolina, and Mr. T. Wayland Vaughan, of the U. S. Geological Survey, spent some time in the study and examination of the Eocene corals.

During the year Mr. J. D. McGuire, of Ellicott City, Md., continued his studies of the art of stone working. Mr. Stewart Culin, of the University of Pennsylvania, spent considerable time in the department of ethnology in the study of games and gambling devices, with a view to comparing them with the series in the Museum of Archæology and Paleontology at the university. Dr. Franz Boas prosecuted an extended

study of the ethnology of the Indians of the Northwest Coast, spending a great deal of time in arranging and labeling specimens. The results of this study and of his visit to the Northwest Coast in 1895 are embodied in a paper on the "Social Organization and the Secret Societies of the Kwakiutl Indians," published in this volume. Dr. W. J. Hoffman, of the Bureau of Ethnology, was also engaged for a considerable time in the prosecution of investigations in the department of ethnology. A paper by him on "The Graphic Arts of the Eskimo" appears in Part II of this volume.

Prof. J. M. Coulter, of Lake Forest University, spent about ten days in the herbarium during February and March in the study of Mexican Umbelliferæ. Dr. B. L. Robinson was occupied about a week in the study of the Ranunculaceæ and neighboring families. Prof. Edward L. Greene, of Berkeley, Cal., spent several days in making critical observations of Western species. Dr. Marcus E. Jones, of Salt Lake City, determined a large collection of plants, giving about four or five months to the work. Mr. John B. Leiberg, of Hope, Idaho, was in Washington for several weeks studying the plants of eastern Oregon; and Mr. P. A. Rydberg, of Lincoln, Nebr., spent two months in the completion of a report on a collection of plants which he obtained in the Black Hills in 1892.

VISITORS.

The following statement shows the number of visitors to the Museum and Smithsonian buildings for each month during the fiscal year ending June 30, 1895:

Month.	Museum building.	Smithsonian building.
1894.		
July	11,914	7,630
August	40,938	22,710
September	17,954	9,942
October	13,931	8,332
November	11,542	6,570
December	13,617	8,214
1895.		
January	11,951	5,819
February	12,588	6,448
March	17,769	8,312
April	19,944	7,032
May	18,837	9,023
June	10,759	5,626
Total	201,744	105,658
Approximate daily average on a basis of 313 days in the year	644	338

Number of visitors to the Museum and Smithsonian buildings since the opening of the former in 1881.

Year.	Museum building.	Smithsonian building.	Total to both buildings.
1881	150,000	100,000	250,000
1882	167,455	152,744	320,199
1883	202,188	104,823	307,011
1884 (half year)	97,661	45,565	143,226
1884–85*a*	205,026	105,993	311,019
1885–86	174,225	88,960	263,185
1886–87	216,562	98,552	315,114
1887–88	249,665	102,863	352,528
1888–89*a*	374,843	149,618	524,461
1889–90	274,324	120,894	395,218
1890–91	286,426	111,669	398,095
1891–92	269,825	114,817	384,642
1892–93 *a*	319,930	174,188	494,118
1893–94	195,748	103,910	299,658
1894–95	201,744	105,658	307,402
Total	3,385,622	1,680,254	5,065,876

a Years of Presidential inaugurations.

MATERIAL RECEIVED FOR EXAMINATION AND REPORT.

It has always been the policy of the Museum to examine, free of charge, specimens transmitted to the Museum for determination, no matter by whom or from what locality. This privilege has been appreciated, as is shown by the large number of packages arriving daily with requests for identification. In this way the special knowledge of the curators is freely placed at the disposal of anyone who chooses to seek it. Since the Museum building was opened in 1881, not less than 6,000 persons have taken advantage of this privilege, and not a day passes without receiving similar requests. In the case of geological material, qualitative determinations only can be made, as the Museum has not facilities for making extended chemical analyses for the public. Its small and insufficiently equipped laboratory is barely sufficient for the analytical work which is absolutely necessary in connection with the current operations of the geological departments.

In addition to requests under this head, numerous requests for technical information, unaccompanied by specimens for determination, are constantly received, and these two classes of requests alone necessitate a large amount of correspondence.

During the year material from all parts of the United States, as well as from British America, West Indies, Mexico, Central America, South America, several countries in Europe, and from Asia and Oceanica, was transmitted to the Museum for examination and report. It is very seldom that any of this material is desired for the collections, and experience has proved that material of a character likely to be wanted, is usually transmitted with a request for its return. When any of these

sendings are retained, their addition to the permanent collections is recorded by means of a double number, as may be seen in Appendix VI. The first number is that which is given to the material on the "examination and report" record; the latter, the number on the permanent accession record. During the year 467 lots (Nos. 2769–3235, inclusive) have been received. Reports prepared by the curators or their assistants have been forwarded to the senders.

A detailed list, arranged alphabetically by names, is given in Appendix VI.

MEETINGS OF ASSOCIATIONS IN WASHINGTON DURING THE YEAR.

The American Historical Association held its tenth annual meeting in Washington on December 26–28, 1894. The lecture hall of the Museum was used for the morning sessions.[1]

On January 3, 1895, the National Science Club held a meeting in the lecture hall.[1]

The regular April meeting of the National Academy of Sciences was, as usual, held in the Museum building. The lecture hall was used for the public meetings and one of the offices for the business meetings. The titles of the papers entered to be read at this meeting are given in Appendix VII.

On February 25, 1888, a joint commission of the Anthropological, Biological, Chemical, Geographic, and Philosophical societies was formed, the Entomological and Geological societies being admitted a short time afterwards. The necessity for more complete cooperation among these societies had been manifest for some time, and many of the prominent members used their influence to bring about such a result. It was felt that one feature of the work, especially, could be carried on to greater advantage—that of providing for suitable courses of popular lectures. Accordingly, on January 25, 1895, the following constitution was drafted, and afterwards adopted by the several societies:

I. The joint commission shall be composed of the officers and administrative boards of the several component societies.

II. The commission shall have power (*a*) to provide for meetings of the societies; (*b*) to conduct courses of popular lectures; (*c*) to prepare a joint directory of the members of the societies; (*d*) to distribute to all members of the societies periodic advance notices of the meetings of the several societies; (*e*) to act in the interest of the component societies at the instance of any of them.

III. The expense thus incurred shall be borne by the several societies in the ratio of their membership.

The joint commission was organized on February 20 with Mr. Gardiner G. Hubbard as president and Dr. G. Brown Goode as vice-president.

Although the Saturday lectures at the Museum for the season of

[1] A list of the papers submitted is printed in Appendix VII.

1895, were more directly under the auspices of the Anthropological and Geological societies, future courses will doubtless embrace the work of other sections as well. The subjects of the lectures for this year will be found in Appendix VII.

The following table indicates the number and dates of Saturday lectures since 1882:

Year.	Date of first and last lecture.	No. of lectures.
1882	March 11, April 29	8
1883	January 13, March 31	12
1884	January 5, April 26	17
1885	February 7, May 2	12
1886	March 6, May 8	10
1887	March 12, May 7	12
1888	February 18, May 5	12
1889	March 9, May 11	10
1890	February 1. April 3	10
1891	.....	.....
1892	.....	.....
1893	March 25, May 13	8
1894	February 17, May 26	15
1895	February 23, April 27	10
Total	.....	135

COTTON STATES AND INTERNATIONAL EXPOSITION AT ATLANTA, GA.

By the act of Congress, approved August 8, 1894, provision was made for a Government exhibit at the Cotton States and International Exposition to be held at Atlanta from September 18 to December 31, 1895. The sum of $150,000 was appropriated, with the addition of $50,000 for the erection of a building. Dr. Charles W. Dabney, jr., was made chairman of the Government board of management. The sum of $22,000 was allotted to the Smithsonian Institution and the National Museum, of which $16,500 is available for the preparation of exhibits. At the close of the fiscal year this work was well under way, exhibits being in course of preparation in the following departments: Mammals, birds, marine invertebrates, comparative anatomy, reptiles, fishes, mollusks, insects, paleontology, minerals, geology, botany, ethnology, and prehistoric anthropology. The technological collections were also represented, as well as the sections of materia medica, oriental antiquities and religious ceremonials.

An extended account of the participation of the Smithsonian Institution in this Exposition, including a description of the exhibits to be prepared by the National Museum, will be published in the Report of the Institution for the fiscal year ending June 30, 1896. Not only the Museum, but all the other dependencies of the Institution, will prepare exhibits, viz, the Bureau of American Ethnology, the Bureau of International Exchanges, the National Zoological Park, and the Astro-

physical Observatory. The exhibit being prepared by the Bureau of Ethnology will include a number of life-size models of Papago and Seri Indians, together with a series of weapons, household utensils, and articles of personal adornment used by these tribes. A collection of similar articles used by the Cherokees will also be shown. The Bureau of International Exchanges will send one of the fifty sets of Government documents which are annually transmitted by the Bureau to institutions abroad, and will exhibit a map showing the geographical distribution of the correspondents of the Institution. The Zoological Park will be represented by a series of views of various objects of interest within its borders, and the Astrophysical Observatory will send a number of photographs of the special apparatus employed in connection with the investigations which are being conducted in that establishment. The Institution proper will exhibit, among other things, a complete set of its publications, comprising about two hundred volumes.

III.—REVIEW OF WORK IN THE SCIENTIFIC DEPARTMENTS.

The statements which appear under this heading are for the most part gathered from the annual reports of the curators. Commencing with the year 1893, these have been submitted in the form of answers to a series of questions. This form of report has, after much consideration, been adopted, for the present at any rate, as preferable to the former plan, the chief objection to which was that the information supplied in the reports did not always present a complete and homogeneous statement of the work accomplished. This made it difficult to comprehend at a glance how much work had been accomplished in any special direction, and often resulted in the introduction of a large amount of material into the volume which did not have a direct bearing on the work of the curator as custodian of a collection, and, therefore, although perfectly admissible in an extended essay, with the work of the department as its basis, was not, at times, altogether within the scope of an administrative document.

In reviewing the work of the scientific departments in the Museum during the year which ended on June 30, 1895, the fact must be remembered that considerable time and labor have been necessarily expended in the preparation of exhibits for the Atlanta Exposition, which opens on September 18. Exhibits for this occasion are being prepared by every department in the Museum, and a statement of what has been done in this direction by each department will be presented in the report for 1896, that being the fiscal year in which the Exposition is to be held. An account of these exhibits, it may be added, is now being prepared in the form of a pamphlet, to be distributed at Atlanta during the continuance of the Exposition.

Experience has proved that the regular work of the Museum always suffers to a very considerable extent during the years when expositions in which the Museum is directed to participate, are held. Nor can it be otherwise, since the features which it is especially desirable to emphasize in special exhibits of this kind are not, as a rule, such as would ordinarily be made conspicuous in the natural development of the Museum exhibition series. Again, it is noticeable that in exposition years the number of papers published by the curators, as the result of their studies of the collections under their care, is much smaller than in other years. This is readily accounted for by the fact that the

time which would otherwise be given to study is consumed in the special work of the exposition, and unfortunately the outcome of this work does not as a rule redound to the full benefit of the Museum after the exposition is over. This subject has been already dwelt upon in previous reports, and while the Museum is always ready to make every effort to provide a creditable display at expositions, it can not be said that, taking everything into consideration, the Museum is much the gainer. It is true that special appropriations are generally made to enable the Museum to participate, but these are so inadequate that not only is the result usually unsatisfactory to the Museum authorities, but also the specimens purchased are not always such as can be assimilated with the permanent Museum exhibits after their return to Washington.

Notwithstanding these obstacles, very excellent headway has been made in strictly Museum work in many of the departments, as will be seen in the following account of what has been accomplished.

DEPARTMENT OF MAMMALS.

By far the most important collection received during the year was that sent in by Dr. W. L. Abbott, who has collected during the year in Eastern Turkestan, on the border of the Pamir, and in Kashmir. He presented a collection of 107 specimens, including several fine specimens of Himalayan ibex, Polo's sheep, Asiatic gazelle, stag, etc., together with good series of marmots, pikas, mice, and other small forms. Mr. William Astor Chanler presented the type of Chanler's Reed Buck (*Cervicapra Chanleri*). From Mr. H. C. Moore were received 40 mammals from South Africa, including several antelopes. This collection will serve an excellent purpose in filling existing vacancies in the exhibition series. A collection of West African species, though mostly in the form of pelts, was received from Mr. J. H. Camp. It included two specimens of the very rare Golden Mole (*Chrysochloris leucorhina*).

The collection has received numerous additions from the National Zoological Park, in accordance with the general understanding that animals dying in confinement shall be turned over to the National Museum, the skins and skulls coming to this department and the skeletons being transferred to the department of comparative anatomy. Several interesting animals, obtained by the Fish Commission, were also added to the collection. From the Government exhibits of Costa Rica, Ceylon, Korea, and Johore at the World's Columbian Exposition, specimens of mammals were acquired at the close of the Exposition, although they were not recorded on the catalogue of the department until during the fiscal year covered by this report. The number of individuals contributing material to this department during the year was 56. The collections of Dr. Edgar A. Mearns, made during his connection with the Mexican Boundary Commission, included 708 specimens of mammals. This gift contained material of much scientific value, the specimens having been prepared and labeled with the greatest care.

The fact that his collections represented the results of continuous exploration along a line of several hundreds of miles, also adds considerably to their value.

The rearrangement of the exhibition series of mammals during the year occupied the attention of the curator, Mr. F. W. True, for several weeks. He thus describes the details incident to this work:

> In the fall of 1894 a complete rearrangement of the cases in the exhibition hall was effected, agreeably with instructions from the Assistant Secretary. The position of all the movable cases was changed, with the object of making a better balanced arrangement and one more attractive, also to break up the continuous vista previously maintained in the center of the hall. It was found necessary thereafter to raise the large cast of a humpback whale, which was done. The series of interlocked antlers was transferred to the osteological hall. Several groups for which no place could be found were packed and stored. Large labels were made for the series of porpoise casts arranged on top of the wall cases. The Audubon lithographic pictures of mammals which were purchased and framed by the Museum some time ago, were hung in the office of the curator until a more suitable place could be found for them. The cetacean molds were all overhauled and a detailed list made of them for reference. The taxidermists mounted eight skins, but on account of being called upon for other work nothing was completed. A large amount of work was done upon the alcoholic study series in the way of cataloguing, arranging, rebottling, etc. The Mearns collection was gone over, a concordance of collector's and Museum numbers made, and other necessary work performed. All new accessions were catalogued and put in cases. A large number of skins from the taxidermists' vats were labeled and put in their proper places.

The work of the taxidermist is referred to more in detail elsewhere.

The present condition of the collections, so far as the preservation of the material contained in them is concerned, is better than at any previous time, as is shown in the following extract from Mr. True's report:

> The exhibition series is in good condition, but the space and cases in which to exhibit it are entirely inadequate. This applies especially to the large mammals. The wall cases are so full that only the heads and necks of the deer, antelope, etc., can be seen. The floor cases are so much crowded that light is obstructed, and the attractiveness of the collection is much diminished. There are numerous antelopes, deer, seals, etc., in the taxidermists' vats, which, when mounted, can be exhibited only with much difficulty and under unfavorable conditions.
>
> As regards the study series, more storage cases are needed for the large skins. The alcoholics will need a great deal more labor spent upon them.
>
> As pointed out last year, the large skulls of horned mammals are in need of better installation. A plan was submitted for that purpose, but was not acted upon. The great series of small skulls, as stated last year, is in a very unsatisfactory condition as regards installation. Some 1,500 boxes were purchased for these skulls during the year, but it was not possible to get the skulls transferred into them.
>
> The card catalogue of skins and alcoholics needs revision. This is an important matter, but can not be taken up and brought to a finish in the midst of constant interruption. An incomplete catalogue of this kind is of practically no value.

Besides the necessary administrative work accomplished in connection with the care of the incoming material and the installation of the specimens most suitable for exhibition, Mr. True has made special studies in certain directions. These have resulted in the preparation of a

paper on the occurrence of armadillos of the genus *Xenurus* in Central America. He has nearly completed a comprehensive paper on the "Antlers of the Deer Family." This will be published as one of the accompanying papers in the next Report. Work has also been continued on a monograph of the American moles, in connection with which the preparation of a series of osteological drawings was found necessary. Mr. True has published four papers during the year—two in "Science" and two in the "Proceedings of the National Museum." The titles are given in the Bibliography (Appendix IV). A new species was described in the paper on the "Rodents of the genus *Sminthus* in Kashmir," under the name of *Sminthus flavus*.

In May, 1895, Mr. True was temporarily attached to the staff of the U. S. Fish Commission, at the request of the Acting Commissioner, for the purpose of making a special study of the seal rookeries.

Owing to the limited appropriations made by Congress for the maintenance of the Museum, very little can be done in the way of explorations under the direct auspices of the Museum. Assistance was rendered to Dr. Mearns in his work connected with the survey of the Mexican Boundary, by supplying him with collecting material. An expedition to Lake Okeechobee, Florida, by Mr. Ridgway and Mr. William Palmer, resulted in obtaining a small number of mammals, chiefly forms not well represented in the collections. It is most fortunate for the Museum that the friendly and valuable assistance of Dr. W. L. Abbott, which has been so often manifested in his generous gifts, has been continued this year. As already stated, a very important accession has recently been received from him as the result of his explorations in Turkestan and Kashmir. The expedition of Mr. William Astor Chanler and Lieutenant von Höhnel in the Tana River region, East Africa, has yielded an important contribution to the Museum collection of mammals. Reference should also be made to the collections of Mr. J. D. Figgins in Maryland, and of Mr. J. H. Camp in the Congo region, West Africa. The thanks of the Museum are further due to Mr. Charles H. Townsend, naturalist of the Fish Commission, for his zeal in obtaining specimens for the Museum while engaged in collecting work under the auspices of the United States Fish Commission.

In accordance with established usage, the Museum has lent its material freely to scientific investigators for study. In this connection may be mentioned several transmissions of specimens from this department to Dr. J. A. Allen and Mr. F. M. Chapman, of the American Museum of Natural History, New York; Dr. Harrison Allen, of Philadelphia; Dr. Edgar A. Mearns, for use in his studies of the Mexican Boundary collection; Mr. S. N. Rhoads, of the Philadelphia Academy of Natural Sciences, and Mr. G. S. Miller, jr., of the Department of Agriculture. Opportunity to study the collection of mammals in the Museum building has also been extended to Dr. Mearns and to the members of the staff in the division of economic ornithology and mammalogy in the Department of Agriculture.

In addition to those already mentioned as having made direct contributions to the collections, the Museum in general, and this department in particular, has benefited greatly through the friendly cooperation of Maj. Timothy E. Wilcox, U. S. A., Fort Huachuca, Ariz., who has sent in many interesting specimens from time to time from the vicinity of his post; to Dr. Sheldon Jackson, of the Bureau of Education, who transmitted a skin of Spermophile, and to Prof. F. A. Ward, Rochester, N. Y., Prof. William Trelease, of the Missouri Botanical Garden, St. Louis, and Dr. P. L. Sclater, London, England. The curator states that many of the officers and employees of the Museum have interested themselves in obtaining specimens for the collection, no less than eighteen different persons having rendered such assistance during the year.

Regarding the plans which the curator has in mind for improving the collection of mammals, he writes:

> What the Museum now needs more than anything else, in my opinion, is a better representation of exotic mammals. Of about 410 genera usually recognized, we possess representatives of only 240, leaving 170 genera entirely unrepresented. Furthermore, many of the genera now in the collection are represented only by a single imperfect skin, or a single skeleton. (Of skulls I have taken no notice.) On very many occasions, in order to become acquainted with the character of a genus or species, I have been compelled to extract the skull (often imperfect) from the single specimen in the collection.
>
> The study of mammals has greatly increased of late, and the investigations are taking a wider range than ever before. In this work the need of specimens of foreign groups is strongly felt, as it is recognized that work upon American material alone is liable to lead to one-sided results. There is no full collection of foreign mammals in America, and at present our students must limit their researches, or go abroad to study. In my opinion, the national collection should endeavor to fill this need.

The number of specimens added to the collection during the year was 1,484. In the catalogue of skins, skulls, and alcoholics 1,872 entries were made, the last entry in June, 1894, having been 60,607, and in June, 1895, 62,479. Skeletons are considered as anatomical specimens, and are entered in the catalogue of the department of comparative anatomy. In the volume in which are entered the specimens belonging to the deposit of the Department of Agriculture 6,402 entries have been made, the last entry in June, 1894, having been 65,818, and in June, 1895, 72,220.

DEPARTMENT OF BIRDS.

The curator, Mr. Robert Ridgway, reports the number of accessions as somewhat in advance of those received in 1894, while the number of entries in the catalogue has been more than 1,100 in excess of that year. The scientific value of the accessions of this year is also reported as greater than of those received in 1894. The curator mentions the names of thirty establishments and individuals from whom important additions to the collections have been received. The list is headed with

the name of Mr. A. Boucard, Isle of Wight, England, who presented 1,666 specimens. These represent a large number of families. Dr. W. L. Abbott, whose name occurs in connection with accessions in several of the departments, contributed 258 specimens from Kashmir, Ladak, and Turkestan. Six accessions, including species obtained in Arizona, California, and Lower California, were transmitted by Dr. Edgar A. Mearns, U. S. A., and Mr. F. X. Holzner, in connection with their work on the Mexican Boundary Survey. In addition, Dr. Mearns also contributed 310 specimens, representing 106 species, from Fort Clark and Fort Hancock, Tex. The curator obtained 152 specimens from Florida, Maryland, and Illinois, and Mr. R. S. Matthews, of the National Museum, presented 159 specimens of birds from the United States, Mexico, and Central America. Mr. Charles W. Richmond, assistant curator of this department, presented 115 specimens from Virginia, Mexico, Borneo, and other localities. Mr. William Palmer, chief taxidermist of the Museum, presented 8 specimens of Hooded Warbler from Virginia, and also collected 36 specimens from Florida. In addition to collections received from individuals, mention should be made of the contribution of 21 specimens from Alaska by the U. S. Fish Commission, and of 41 specimens from South America, acquired from the La Plata Museum, La Plata, Argentina, in exchange.

A series of specimens has been selected with considerable care for a special exhibit of a popular character. This has been installed on the first floor of the south tower. In this series it is intended to include every species likely to be asked for by the casual visitor, or by anyone making an elementary study of ornithology. It is thought that it will be of especial interest to the pupils of the public schools. The exhibit consists of the following series: The more familiar European birds; the more familiar North American birds; remarkable birds of other parts of the world; a series illustrating and explaining the confusion of popular names, examples of protective coloring, protective mimicry, etc., "Giants and Pygmies," or the largest and smallest members of certain groups; a series of eggs, showing a gradual transition in size from the egg of the extinct *Æpiornis* to that of the smallest humming bird; albinos and other abnormal color varieties and malformations, and a series of flightless birds, together with those of extraordinary powers of flight, for comparison. A catalogue will probably be printed, which, by means of reference numbers and letters, corresponding to the numbering on the shelves and cases, will enable the visitor to locate any specimen without difficulty. In addition, a label will be provided for each specimen. It is also proposed to place in the alcove a reading table and a case containing a few selected works by well-known writers on ornithology.

Valuable assistance in the preparation of this exhibit has been received from Mrs. Olive Thorne Miller, of Brooklyn, N. Y.

The following paragraphs from the curator's report will serve to show

what progress has been made in caring for the collections, and also the present condition of the exhibition and study series:

The collections have been thoroughly inspected at proper intervals, and fumigated with bisulphide of carbon to destroy any insects which might be present. No insects have been found, however, and, except in the exhibition cases, few of which are sufficiently tight to prevent the ingress of insects or to allow of effective fumigation, and in the old Salvin cases in the west basement, there is little danger to be apprehended in this direction.

Some changes have been made in the mounted collection, as follows: A limited number of badly mounted specimens have been remounted, and other specimens too dilapidated for exhibition have been replaced by better ones. The taxidermist has been engaged for several months past in renovating the entire mounted collection, subjecting each specimen to a process of cleaning, which, it is hoped, will result in a material improvement in this part of the collection.

A volunteer assistant, Mr. E. E. Armstrong, spent over two months in the department of birds, in this time lining with sheet cotton the trays (about 850 in number) contained in the 54 quarter-unit cases in the bird gallery, resulting in a great improvement to this part of the study series.

The condition of the exhibition series is very good, and improvements and renovations are being made as time permits. The condition of the study series is excellent, as far as that portion of the collection accommodated in the bird gallery is concerned. The large birds, stored in the west basement, are in course of rearrangement (and have been for several years), this having been proceeded with until the cases of the new model provided for the purpose became exhausted. The work has since been continued on sporadically to accommodate temporarily the increase in the collections.

The work of Mr. Henry Marshall, taxidermist, is referred to more in the chapter relating to the work of the Museum preparators.

The curator has completed an elaborate treatise on the Galapagoan avifauna, and the paper has been submitted for publication. It consists of some 650 pages of manuscript, accompanied by outline maps illustrating the range of all the species known to inhabit the archipelago, and two plates of outline figures illustrating generic and specific characters. The text includes observations on the origin of the Galapagoan avifauna and other matters. It will doubtless prove to be a work of great value, and is, in the words of the curator, "in some respects the most important work that the author has written."

The avifauna of the island satellites of Madagascar, from the Comoro group to the Mascarenes, has been somewhat similarly worked up, though in less detail. The paper embodying the results of this work is based primarily on Dr. Abbott's collections from Aldabra, Assumption, Gloriosa, and the Seychelle Islands, but is not quite finished. Progress has also been made on a comprehensive treatise on the birds of North and Middle America. This is a work of great magnitude and importance, and will constitute a valuable addition to the ornithological literature of the Museum.

The gallery in the Smithsonian building, used by the department of birds for office purposes, is in many ways unsuited to work requiring close application. There being no room in either building available for the use of the curator, he has found it necessary to do a large part of

his literary work at home. In view of the difficulties encountered, he is entitled to great credit for the work which he has been able to accomplish in addition to the routine duties of the department.

The explorations of Dr. W. L. Abbott in Kashmir, Ladak, and Turkestan, have, as already intimated, redounded in a large degree to the benefit of this department. The collecting work accomplished by Dr. Edgar A. Mearns and Mr. F. X. Holzner, of the Mexican Boundary Survey, by Mr. Ridgway in Maryland and Florida, and by Mr. William Palmer in Florida, has resulted in the acquisition of many interesting specimens.

Several ornithologists have used material belonging to the department in connection with their special studies. In some instances the material was transmitted to their homes, while in others it was studied in the gallery of the department. The curator gives the names of thirty persons through whose cooperation the collections have been enriched during the year.

It is gratifying to remark that the material in this department has served as a basis for 26 papers published during the year by the curator, Mr. C. W. Richmond, the assistant curator, and several collaborators of the Museum. These are all included in the Bibliography (Appendix IV).

The total number of specimens received during the year was 5,499.

The entries in the catalogue books aggregate 5,499, as follows:

Regular catalogues	133219–135700 149801–150721
Department of Agriculture catalogue	135701–136130
Boucard collection catalogue	145101–146766

DEPARTMENT OF BIRDS' EGGS.

Maj. Charles Bendire, honorary curator, reports that 2,023 eggs and nests were added to the collection during the year. Their value is proportionately as great as that of the accessions in the previous year, although far less in number. Several new species and subspecies were included. Nearly all the accessions to this collection were given to the Museum, and the records contain the names of 30 donors who have thus rendered assistance. Only four specimens were acquired by purchase

The most important contributions were made, as in several previous years, by Dr. William M. Ralph, of Utica, N. Y., whose generosity has elicited the warmest gratitude of the Museum authorities. His contributions this year consisted of 346 sets, including 1,224 eggs (repre senting 159 species), and 50 nests. This accession contains many rare and valuable specimens, besides adding nine species and subspecies to the collection. Among other contributors of valuable accessions were Dr. W. L. Abbott, of Philadelphia, Pa., who forwarded 38 specimens, representing 11 species; and Mr. Chase Littlejohn, Redwood City, Cal., who presented 20 specimens, representing three species. Collections

were also received from the U. S. Fish Commission and the Department of Agriculture.

This collection, including both the exhibition and study series, is in excellent condition, every accession being carefully catalogued, labeled, and disposed of as soon as it is received.

The curator has devoted most of his time, when not engaged in work on the accessions, to the preparation of the second volume of "Life Histories of North American Birds," which is now in the hands of the printer.

The last catalogue entry made in June, 1894, was 27088 and in June, 1895, 27655.

DEPARTMENT OF REPTILES AND BATRACHIANS.

The material added to the collections during recent years has been of special value from a scientific standpoint, and the past year has been no exception. The number of specimens received in 1895 shows a slight increase over the records of previous years. Nearly 1,100 specimens were added to the collection, the largest number heretofore received in any one year being 1,055. This was the total for the year ending June 30, 1892, when the material from the Death Valley Expedition was received. By far the most important collection was that sent in by Dr. Edgar A. Mearns, U. S. A., of the International Boundary Commission, which was found upon examination to contain a number of new species. Dr. A. K. Fisher, of the Department of Agriculture, made collections in the vicinity of the Mexican boundary, and material of considerable value was received from him during the year. A small but interesting collection of reptiles from the Jombené Range, East Africa, was received from Mr. William Astor Chanler. Several valuable collections were transmitted by the U. S. Fish Commission, including material obtained by Messrs. Evermann and Hirsch from the Maumee Basin, and by Mr. C. H. Townsend from the Galapagos Islands. Dr. William L. Abbott presented material from Turkestan, and Prof. John Macoun, of Ottawa, sent a collection of Garter snakes from Canada. A specimen of *Amblyostoma annulatum*, of which only one example had previously been taken, was purchased from Messrs. H. H. and C. S. Brimley, of Raleigh, N. C. A few specimens of rare New Mexican snakes were also purchased.

In addition to those whose names have already been mentioned, reference should be made to the contributions of Prof. T. D. A. Cockerell, of Las Cruces, N. Mex., who transmitted a number of specimens of reptiles; Mr. Hubert Brown, of Tucson, Ariz., who sent in several specimens of lizards; Mr. Henry G. Hubbard, of Washington, D. C., who collected specimens of *Rana æsopus* in Florida; Mr. H. Candlin, of Kerrville, Tex., who sent specimens of snakes from that region, and Dr. O. Boettger, Frankfort-on-the-Main, Germany, who transmitted in

exchange two specimens of Chinese lizards, desired for purposes of comparison.

During the fall of 1894 the curator made a trip to the Bad Lands of South Dakota, where he obtained a number of interesting specimens. Mr. William Palmer, of the National Museum, also made collections during his visit to Florida, in the spring of 1895.

Experiments have been made with formalin as a preservative, with a view to using it as a substitute for alcohol, but, while it has been found to possess advantages over the latter for use in the field, it is doubtful whether it will ever take the place of alcohol in the preservation of permanent museum collections.

During the year the entire collection was overhauled, and the alcohol renewed. The exotic species in the study series have been rearranged. Owing to lack of space, no attempt has been made to increase the exhibition series.

As mentioned elsewhere in this report, material has been lent to specialists for study on several occasions during the year, and to Prof. E. D. Cope, of Philadelphia, were given special facilities for study in the laboratory of the department.

Dr. Stejneger has commenced the preparation of reports upon the reptiles of the Mexican Boundary, and upon the collections made by Dr. Fisher in the Huachuca Mountains. He has also continued work on his proposed manual of Japanese Herpetology. Several papers based upon Museum material have been published by the curator during the year, two of them containing descriptions of new species. All of the papers are referred to in the Bibliography (Appendix IV).

The last entry in the catalogue for the fiscal year covered by this report was 22,482, the last entry for the preceding year having been 21,388, a total of 1,094 entries.

DEPARTMENT OF FISHES.

Dr. Tarleton H. Bean still remains honorary curator of this department, although since his change of residence to New York Mr. Barton A. Bean, assistant curator, has practically performed the duties of curator. In his report he states that, although the accessions of the year were not so numerous or important as in 1894, much valuable material has been received. The most important accessions were a collection of fishes made at Mazatlan by Dr. David S. Jordan and others, and presented by the Leland Stanford Junior University; a collection of fishes made at the Azores by Prof. William Trelease, director of the Missouri Botanical Garden, St. Louis; a series of deep-water fishes from the Indian Museum, Calcutta, collected by H. M. S. *Investigator* in the Bay of Bengal. The U. S. Fish Commission transferred to the Museum types of fourteen new species of fishes collected in Texas, Tennessee, Missouri, Iowa, and Lake Ontario; also collections of fishes from Texas, Tennessee, Kentucky, and the Columbia River

Basin. In all, upward of 6,000 specimens were added to the collection during the year.

Old and recent collections of Japanese and Chinese fishes, not installed with the general collections, as well as collections made by the *Albatross* and from other sources, in the West Indies and around the coasts of Florida, have been given a temporary place in the basement storage rooms. Duplicates from the deep-sea collections have been provided with metal tags and numbered, the species being separated in jars systematically arranged. Several large collections have been catalogued, including some resulting from the dredgings of the *Albatross* in the Pacific Ocean, and received during the previous year. Perhaps the most important work has been the selection and arrangement of the deep-sea material with a view to the preparation of the duplicates into sets for distribution to educational establishments. By this process of elimination the study series is now in a much more satisfactory condition. This series has also been improved by the accession of new and well-preserved material, including a number of types of new and rare forms.

No special change has been effected in the exhibition series, which consists of five cases of casts of fishes, exhibited in the west hall of the Smithsonian building, and a large number of casts placed on the tops of cases containing corals, besides two cases of alcoholic specimens preserved in rectangular jars.

Mr. Bean has prepared a list of the European fishes in the collections, and a list of the types of fishes preserved in the collections is now receiving his attention. Dr. Theodore Gill has examined a number of European fishes. Work upon the deep-sea fishes has been continued by the Assistant Secretary and Dr. Bean, in connection with the preparation of Special Bulletin No. 2, "Oceanic Ichthyology." The assistant curator and Mr. B. W. Evermann, of the U. S. Fish Commission, have in preparation a bibliographical list of the fishes recorded from the fresh waters of North America north of the United States.

Accessions of fishes resulted from the work of field parties of the Department of Agriculture in the Death Valley and in Mexico, the United States and Mexican Boundary Survey in California, and the explorations of Messrs. Scovell and Woolman in Mexico in 1891. In addition, collections were made in Lake Ontario and the St. Lawrence River during July and August, 1894; also in Lake Champlain and in various streams of northeastern New York, by Messrs. Evermann, B. A. Bean, and others, under the auspices of the U. S. Fish Commission. These will be added to the Museum collections after examination.

Material from this department has been lent to several specialists to aid them in their researches, and four collaborators of the Museum have studied the collections in the building.

Twelve papers, based wholly or in part on the collections, have been published during the year. The authors were Dr. G. Brown Goode,

Dr. T. H. Bean, Mr. Barton A. Bean, Mr. Charles H. Beeson, Mr. Carl H. Eigenmann, and Dr. Theodore Gill. Two new families, 11 new genera, and 9 new species were described in these papers.

Upward of 6,000 specimens were received during the year. The last catalogue entry in June, 1894, was 45451, and in June, 1895, 47504.

DEPARTMENT OF MOLLUSKS (INCLUDING CENOZOIC FOSSILS).

The year 1894–95 has undoubtedly been one of the foremost in the accomplishment of work in this department. During the absence of the curator, Dr. William H. Dall, in Alaska, Mr. Charles T. Simpson, assistant, assumed charge of the work. Dr. R. E. C. Stearns, who has labored so faithfully for many years in this department, still serves in an honorary capacity as associate curator, although he has left Washington to reside in Los Angeles, California.

The number of accessions received during the year was 111, the same as in 1894. They are, for the most part, smaller in extent, although some of them are reported by Dr. Dall as being quite valuable. The most important contributions, as in many previous years, were made by Rev. Dr. L. T. Chamberlain, to whom the warmest thanks of the Museum are due for so many valuable additions to the collections. Among his gifts to the Museum this year was a specimen of *Pleurotomaria beyrichi*, Hilg., from Japan. Series of land, fresh-water, and marine shells from the Philippine Islands were secured from Hamline University, through Prof. H. L. Osborn, in return for naming the large collection belonging to the university. In a similar way series of Anodontas and Unios from Canada and British America were obtained from the Geological Survey of Canada, through Prof. J. F. Whiteaves. This material is extremely valuable in furnishing evidence of geographical distribution, on account of the accurate record of the localities from which it was derived. Dr. H. von Ihering also transmitted Unionidæ and other fresh-water shells from Central and South America, in return for aid in naming his material. Mr. W. W. Herman presented several species of Japanese marine shells, in return for similar services. Mr. W. B. K. Johnson contributed land and fresh-water shells from the Isle of Pines, Cuba. The Young Naturalists' Society, of Seattle, Wash., gave a series of *Terebratula transversa* and other shells from Puget Sound. The California Academy of Sciences, through Dr. J. G. Cooper, gave a collection of Lower Californian land shells, in return for identifications made for the Academy. An extensive lot of land shells and other material was collected and transmitted by Dr. Edgar A. Mearns, U. S. A., in connection with his work on the Mexican Boundary Survey. From the Museum of Natural History in Paris, France, has been received, in exchange, a set of brachiopods obtained by the *Travailleur* at great depths in the eastern Atlantic Ocean. The numerous accessions received from Miss Ida M. Shepard and Mr. T. S. Oldroyd, in connection with their investigations of the fauna of San Pedro Bay, California, are

very valuable to the collection. The first installments of the mass of material which was collected by the U. S. Fish Commission and placed many years ago in the hands of Prof. A. E. Verrill, of Yale College, for study and identification, have been received. This fact is recorded with much pleasure and the acknowledgments of the Museum are due to Professor Verrill for the long and difficult task which the study of this material has imposed upon him.

The curator thus reports on the work accomplished during the year in connection with the preservation and installation of the collections:

During the year ending June 30, 1895, about 14,132 specimens, representing about 3,000 species, have been entered upon our record book for the study collection. Most of these, together with a large amount previously entered, have been regularly incorporated in the study series, the general index has been further added to and corrected, and lists of the species and genera for ready reference have been written and placed in each tray of the working collection. The entire general collection of Naiads has been carefully examined and compared with the Lea collection and literature and accurately named. They have been arranged in a natural system, in groups. At the present time Mr. Simpson is making out cards showing their distribution.

A considerable part of the fine general marine collection presented by the Rev. Dr. L. T. Chamberlain has been administered upon, a part of this being added to the general collection and the remainder being placed among the duplicates.

An extensive collection of alcoholic and dry material which was collected by the U. S. Fish Commission off the coast of New England has recently been received from Prof. A. E. Verrill, who has held the same for study and naming. The alcoholics have been carefully examined and the alcohol made of preservative strength. The dry specimens are now being labeled by Miss Beard preparatory to being incorporated in the study and duplicate series. During the year the shells of the family Mactridæ have been carefully named and arranged by Dr. Dall in connection with his study of the group. The tree snails of the Philippine Islands have been brought together, arranged essentially according to Pilsbry's "Manual of Conchology," and placed on exhibition.

The present condition of the exhibition and study series, both of recent and Tertiary mollusks, is indicated by the curator in the following words:

The general marine collection occupies the drawers of the cases running along the middle of the main hall; the collection from the west coast of North and South America and the general collection of land and fresh-water shells are in the southeastern gallery; the Jeffreys collection and the collections from the West Indies and east coast of North America are in the curator's offices in the north tower; the Lea collection of Naiads is exhibited in the table cases in the eastern half of the main hall; the tree snails from the Philippine Islands are exhibited in two table cases in the western half of the main hall; the duplicates are stored in the basement; the alcoholic collection occupies the basement room, part of the northeastern gallery, and two rooms in the north tower; the collection of Tertiary fossils is in the northeastern gallery.

Dr. Dall has partially completed his studies of the genus *Cerion*, naming three new subgenera, founded on internal lamellæ, and has finished his study and arrangement of the family Mactridæ, and the classification of the Pelecypoda. The results have been published in the Proceedings of the National Museum and elsewhere. He has also continued his work on the Floridian Tertiary fauna.

Mr. Charles T. Simpson has completed his investigations of the land snails of the West Indies, and has carried on through the year his studies of the Naiads of the Lea and general collections, resulting in a paper soon to appear in the Proceedings of the National Museum on the classification and geographical distribution of these forms.

The collection has been enriched during the year by the results of the explorations of Prof. Alexander Agassiz on the yacht *Wild Duck*, among the Bahamas. The Museum was presented with a series in return for the services of Dr. Dall in working up the collections.

Explorations of the mollusk fauna of San Pedro Bay, California, have been carried on systematically by a group of conchologists, especially Miss Ida Shepard and Mr. T. S. Oldroyd, for some years. The doubtful forms have been worked out at the Museum, and a series of them, including many varieties, has been donated by the collectors. Explorations by the California Academy of Sciences in the Lower California Peninsula have resulted in collecting some fine and rare land shells, of which a series has been donated to the Museum by the academy.

Assistance has been extended to several conchologists by the loan of material from the collections for study in connection with special investigations. To three specialists have been accorded facilities for studying the collections of this department in the curator's laboratory. A list of these transactions will be found in another part of the Report.

The curator has determined a large amount of material, including 1,701 species forwarded for examination and report by seventy students and institutions. He has also carried on an extensive correspondence in the way of supplying technical information in reply to special inquiries from conchological students in all parts of the world.

The curator has published sixteen papers during the year, almost all of which have a direct bearing on the work of this department. Dr. R. E. C. Stearns published two papers in the "Nautilus." Five papers based on material belonging to the department were published by Mr. Simpson—four in the "Nautilus" and one in the Proceedings of the National Museum.

In connection with the entry in the catalogue of material belonging to this department, several volumes are used for convenience, and the total number of entries in these books indicates the entire number made during the year.

Catalogue entries for the fiscal year ending June 30, 1895.

Volume.	First entry.	Last entry.	Increase.
XXIII	107070	107329	260
XXIV	115766	116125	360
XXVII	128276	130100	1,825
XXVIII	130101	130942	842
Total			3,287

DEPARTMENT OF INSECTS.

The report of the honorary curator, Prof. C. V. Riley, shows an increase in the number of accessions, there being 173 in 1895 against 163 in the preceding year. The most important gifts in 1895 were as follows: A collection of Odonata from Chinese Turkestan, presented by Dr. William L. Abbott, whose generosity to the Museum has been so frequently manifested in his gifts to this and other departments both in this and in previous years; a collection of Lepidoptera from Guiana, presented by the British Guiana Commission to the World's Columbian Exposition; a large collection of Lepidoptera from Jombené Range, East Africa, presented by Mr. William Astor Chanler and Lieutenant von Höhnel; a collection of Japanese insects representing 1,500 species of all orders from the Imperial University, Tokyo, Japan; types of 35 species of Noctuids from Prof. J. B. Smith, New Brunswick, N. J. Other valuable collections were acquired by exchange.

The biologic material of Coleoptera, including a large collection of European larvæ, obtained in past years by exchange with Schiödte and Meynert in Copenhagen, as well as by Professor Riley's own collectings and breedings, has been arranged in systematic order in two cabinets. A large part of the year was devoted to the study and proper arrangement of the exotic Coleoptera. This work was undertaken primarily to facilitate report upon the Japanese collection and the material obtained in East Africa by Dr. W. L. Abbott, Mr. William Astor Chanler, and Lieutenant von Höhnel.

The urgent demand for space in other directions rendered it necessary to temporarily withdraw from exhibition the series illustrating systematic entomology. The study series are reported to be in good condition. A large amount of material, especially in the orders Hymenoptera and Coleoptera, remains unidentified, owing to pressure of work in other orders.

During the year the curator commenced a comprehensive study of the Termites of the world. The assistant, Mr. M. L. Linell, began a study of the Coleopterous fauna of the Galapagos Islands and its relation to the continent.

In ten instances material from this department was placed in the hands of specialists for study and identification. Eight entomologists have taken advantage of facilities offered to study material in the curator's offices.

The curator, his collaborators, and other specialists in entomology have published during the year 31 papers based upon the Museum collections. These are mentioned by titles under the names of the authors, in the Bibliography (Appendix IV). Twelve new genera and 329 new species are described in these papers. This remarkably large number was due to the descriptions by Mr. W. H. Ashmead of new genera and species from St. Vincent, forwarded by the West India

committee for identification. Under this arrangement with Mr. Ashmead one set of types has been deposited in the U. S. National Museum.

The number of specimens received during the year is about 3,000. This does not include the Japanese collection of about 10,000 specimens, which was received during the previous year, but not taken up on the accession records until the year 1894–95. The last entry in the catalogue in June, 1894, was 1423, and in June, 1895, 1584.

DEPARTMENT OF MARINE INVERTEBRATES.

An important feature of work in this department has been the distribution of duplicate collections of marine invertebrates. Forty-two sets have been disposed of in response to applications from educational establishments. Reference to these and all other distributions made during the year will be found in Appendix X. In only four of the other departments of the Museum—minerals, geology, fishes, and prehistoric anthropology—has any systematic work in separating the duplicates for this purpose been possible. From this department, in addition, twenty-one special collections were also sent out for Museum purposes and for study. The work of preparing these collections has devolved upon the assistant curators, Mr. James E. Benedict and Miss Mary J. Rathbun. The honorary curator, Mr. Richard Rathbun, has been able to devote only a very limited amount of time to Museum matters, being almost exclusively engaged in the work of the Fish Commission, to which he is officially attached.

There was an increase of eleven accessions over the number received in the preceding year, and the scientific value of the accessions for this year far exceeded that of those acquired in the preceding year. The total number of specimens added to the collections in 1895 was 2,378. The United States Fish Commission was the principal contributor, and from it were received four collections, comprising a large and valuable series of Holothurians and Foraminifera, resulting from the cruise of the *Albatross* to the Galapagos Islands in 1891, types of *Calamocrinus diomedeæ* Agassiz, and Brachyura and Anomura from the North Pacific Ocean, the latter group containing a fine series of *Lithodidæ*. A collection of crustaceans and worms from the Azores was contributed by Prof. William Trelease, director of the Missouri Botanical Garden, St. Louis, as a part of the result of his expedition. Dr. Edgar A. Mearns, U. S. A., transmitted an interesting series of invertebrates from near San Diego, Cal. This, and numerous other collections received from Dr. Mearns, was the result of an arrangement made between the War Department and the Smithsonian Institution in connection with the work of determining the boundary line between the United States and Mexico. Mr. Warren W. Herman contributed crustaceans, echinoderms, and hydractinians from Japan. Mr. Harlan I. Smith, of Saginaw, Mich., sent crayfishes, sponges, and bryozoans

from rivers in Michigan. He also transmitted some Oniscidæ. Important accessions were secured in exchange from the Indian Museum, Calcutta; Manchester Museum, Manchester, England; University of California, Berkeley, Cal.; State University of Iowa; Leland Stanford Junior University; Glen Island Museum, Glen Island, New York; Canterbury Museum, Christchurch, New Zealand; Museum of Comparative Zoology, Cambridge, Mass., and from several individuals.

The room at the west end of the Smithsonian building, known as the "Chapel," is at present used as the exhibition hall for objects belonging to this department. The space being so limited, it is necessary to use great care in selecting from the mass of material the most suitable specimens for exhibition. The result is as pleasing as is possible under the circumstances, and much has been done during the year to maintain and increase the interest of visitors. The work accomplished in the preservation and installation of the collections, including not only the limited number of objects which are on exhibition, but also the much larger portions of the collections which form the reserve and study series, will be best understood from the following paragraphs taken from the annual report submitted by Mr. Benedict:

> The exhibition series does not differ essentially from its condition a year ago. Five old-fashioned flat ebony cases in the west hall have been replaced by mahogany ones. The systematic series has been removed from the center to the north end of the hall, and two of the table cases from near the center to the alcove. Labels for the collection of mounted commercial sponges have been prepared for the printer.
>
> The basement room formerly used by the department of reptiles was early in the year assigned to this department, and with the aid of the additional storage thus afforded it was proposed to make a more systematic arrangement of the alcoholics stored in the basement. But later this room was transferred to another department, and the contents were moved to a small and dark tower room leading from the gallery used as a workroom.
>
> The collection of annelids has been rearranged in a drawer stack in the gallery. The collections stored in homeopathic vials in the gallery have been gone over, and alcohol and new stoppers added where necessary. The large collection of Alaskan sponges recently returned by Mr. Lambe has been entered in the catalogue and duplicates selected. In the winter it became necessary to overhaul thirty of the duplicate sets put up a year before, as many of the tin cases were rusted. These were renewed or the specimens transferred to jars.
>
> By far the most important work in the way of adding to the study series was the return of vast collections of material received from the United States Fish Commission between the years 1871 and 1887, and stored at the Peabody Museum, New Haven, Conn., in charge of Prof. A. E. Verrill, pending a report upon the same. In order that the return of the specimens might be facilitated, Mr. Benedict spent about three months of the past year in New Haven, assisting in sorting and packing under the direction of Professor Verrill, the first set of duplicates being set aside for Professor Verrill, and the remaining duplicates and the reserve set being returned to the National Museum. Much of the unidentified material has been treated as if named, a division being made and one set returned to the National Museum. The unnamed sponges were catalogued before their return, and occupy nearly 100 numbers in the catalogue book. Miss K. J. Bush has been employed throughout the year in dividing the Mollusca into three sets, the third set being for Mr. Sanderson I. Smith. After the arrival of the material in Washington, an

invoice is made and the mollusks are turned over to the department of mollusks. During the year 1894–95, 68 cases of invertebrates have been shipped, containing about 7,500 lots of specimens. A beginning has been made in card-cataloguing the specimens received from this source.

In connection with the preparation of an exhibit for the Atlanta Exposition, it is proposed to make a series of mountings of dried specimens, especially deep-sea corals, echinoderms, etc. These will later form a part of the permanent exhibit of the department.

Notwithstanding the necessarily great expenditure of time in the routine work, Mr. Benedict has continued his studies of Anomura, especially of the large forms of the family Lithodidæ, resulting in a paper, describing many new genera and species, which has recently been published in the Proceedings of the National Museum. He has also devoted such time as he could spare to the study of the Paguridæ.

Miss Rathbun completed her study of the genus *Callinectes*, and a report upon the same is now in press, as is also a paper containing descriptions of new species of fresh-water crabs. Work on the general subject of American brachyurans has been continued. Miss Rathbun spent about two weeks at the Museum of Comparative Zoology in making comparisons of specimens, and in examining Prof. A. Milne-Edwards's types of West Indian crabs.

Besides the large collections obtained from the dredgings of the U. S. Fish Commission steamer *Albatross* off the west coasts of Mexico, Central and South America, and off the Galapagos Islands, under the charge of Mr. Alexander Agassiz, and from other explorations made by the *Albatross*, several other explorations in this and previous years have resulted in the acquisition of valuable material; such, for instance, as the deep-sea dredgings in the Indian Ocean by Her Majesty's Indian marine survey steamer *Investigator*, which brought to the Museum a valuable collection of crustaceans and corals; the natural history work of the Mexican Boundary Commission, through the efforts of Dr. Edgar A. Mearns, U. S. A., and the dredgings made by Mr. William E. Hoyle, chiefly in the Firth of Clyde, which were deposited in the Manchester Museum, whence an interesting collection was transmitted to the National Museum in exchange. The Museum was the recipient of important collections obtained through explorations under the auspices of the Leland Stanford Junior University and the University of California, along the coast of California. The collecting expedition of Mr. L. M. McCormick, curator of the Glen Island Museum, Glen Island, New York, in the vicinity of Aden, Arabia, also yielded some very interesting material, a part of which was secured in exchange.

Assistance has been extended to several specialists by the loan of material belonging to this department. The Museum is under many obligations to Mr. Lawrence M. Lambe, of the Geological Survey of Canada, for his generous aid in the study and determination of a large collection of sponges from the North Atlantic Ocean, and of a smaller collection of mounted Alaskan sponges. Prof. Edward Potts,

Philadelphia, Pa., and Dr. Walter Faxon, of the Museum of Comparative Zoology, Cambridge, Mass., have also identified collections, for which courtesies the Museum extends its most grateful acknowledgments. The facilities of the laboratory of this department have, as usual, been placed at the disposal of specialists desiring to avail themselves of the privilege.

The titles of eleven papers by Mr. Benedict, Miss Rathbun, Dr. Walter Faxon, Mr. Lawrence M. Lambe, and others, based wholly or in part on Museum material, were published during the year. Five of these appeared in the Proceedings of the National Museum. They are all mentioned by title in the Bibliography (Appendix IV). Thirteen new genera, 69 new species, and one new subspecies are described in these papers. Their names will be found in the supplements to the Bibliography (Appendix IV).

The number of entries made in the catalogues of the department during the year was 1,803. These were assigned to the several books, as follows:

	Last entry in 1894.	Last entry in 1895.	Increase.
Crustaceans	18411	18811	400
Worms	4970	4971	1
Bryozoans and Ascidians	2887	2888	1
Echinoderms and Coelenterates	17908	18149	241
Sponges and Protozoans	6326	7486	1,160
Total			1,803

HELMINTHOLOGICAL COLLECTION.

For several years material suitable for such a collection has been slowly accumulating, but no attempt has been made until recently to provide for its systematic preservation and classification. In this work the Museum now enjoys the cooperation of Dr. C. W. Stiles, of the Bureau of Animal Industry in the Department of Agriculture, who received a formal appointment on March 17, 1894. It is a source of much gratification that Dr. Stiles has found it possible to assume the duties of custodian of this collection, and the Museum recognizes with pleasure the addition of another friendly bond between the scientific staff of the Department of Agriculture and that of the Museum.

Under date of January 9, 1894, Dr. Stiles wrote as follows regarding the formation of a section of helminthology:

> In order to collect and preserve the types of American species of parasites, and in order to obtain a collection of the typical specimens of parasites of this and other countries, I think it would be extremely desirable if the U. S. National Museum would establish a department of medical zoology or helminthology. As I know that you would favor such a step, I would respectfully submit the following proposition, in case the Museum does not see its way clear or does not think it possible to appoint a full curator to take charge of this subject:
>
> I will tender my services as curator without pay, or as honorary curator of helminthology or of medical zoology, and will agree to deposit my private collection

in the Museum, under such terms as we shall agree upon, as a nucleus of the collection, in case you can give me a room in which the specimens may be kept, and the necessary apparatus (bottles, etc.) to take care of material which may be sent in.

On January 13 I addressed the following reply to Dr. Stiles:

I need not say that I shall be very glad indeed to have you attached to the Museum staff in an honorary capacity. I do not think we wish to establish a section of medical zoology, but a section of helminthology, in connection with one of the zoological curatorships, would be very desirable.

This letter was followed, on March 17, by a formal letter of appointment from the Secretary of the Smithsonian Institution.

By an arrangement already completed, the collection will be enriched by the transfer of the collections made by the Bureau of Animal Industry and by Dr. Stiles personally. The collections of Dr. Hassall and Dr. Leidy will also be temporarily turned over to the Museum. By exchanges with museums in Berlin and Vienna, as well as with various specialists, much important material will, it is expected, be obtained. An invitation has already been extended to all workers in helminthology to deposit types or typical specimens in the Museum. Several colleges have been supplied with parasitic material for study, from the reserve series, and it is hoped that by pursuing a generous policy in this direction the Museum will ultimately be the recipient of much desirable material.

The greater part of the collection at present consists of material which has been obtained by Dr. Salmon, chief of the Bureau of Animal Industry, Department of Agriculture, Dr. Stiles, and Dr. Albert Hassall, who is also on the official staff of the Bureau. Dr. Salmon has deposited a number of types of species which have been described in the publications of that Bureau. Dr. Hassall has presented several cotypes of species described by Cobbold. Through Dr. Stiles's offices a collection of types of species described by Dr. Leidy and belonging to the University of Pennsylvania has been secured as a loan. In addition, Professor Stossich, of Trieste, Austria, has transmitted a number of parasites, and Dr. A. Looss, of Leipzig, Germany, has forwarded, in exchange, a collection of parasites from Egypt. Dr. H. B. Ward, of Lincoln, Nebr., has added a number of cotypes to the collection, and from Prof. R. Ramsay Wright, Toronto, Canada, and Mr. Robert Mills, Chuluota, Fla., very acceptable material has been received. Prof. A. Dugès, of Guanajuato, Mexico, transmitted some specimens for determination.

No attempt has yet been made to form an exhibition series. The material obtained by Dr. Stiles is retained in the Bureau of Animal Industry until it has been studied, after which it is formally deposited, according to law, in the National Museum.

The Bureau of Animal Industry has partly for its object the investigation of diseases of animals. The members of its staff are therefore constantly placed in a peculiarly favorable position for obtaining

parasitic material. The Bureau has published a large number of valuable papers based on its investigations, and new studies in scientific and economic helminthology are being constantly commenced. Thus, Dr. Stiles, who has just completed his "Revision of the Adult Leporiine Cestodes," is now engaged in a study of the cestodes of birds.

The titles of papers published during the year by Dr. Stiles and Dr. Hassall, based upon material in the collections, are given in the Bibliography (Appendix IV).

At the end of June, 1895, 106 entries had been made in the catalogue.

DEPARTMENT OF COMPARATIVE ANATOMY.

The curator of this department, Mr. F. A. Lucas, reports that about 250 specimens have been added to the collection during the year. The accession of greatest value is the skeleton of the type of *Cervicapra Chanleri*. This was collected by Mr. William Astor Chanler in the Tana River region, East Africa, and was presented by him to the National Museum. Some desirable birds in alcohol have been received from Dr. Edgar A. Mearns, resulting from his participation in the work of the Mexican Boundary Commission.

Under the direction of Mr. Lucas the work of cleaning skulls of mammals and skeletons and sterna of birds has been continued. During the year 850 skulls have been thus treated for the department of mammals alone. These are entered in the catalogue of the mammal department, and therefore the total number of entries in the catalogue of this department is correspondingly diminished.

Mr. Lucas has continued his studies on the anatomy of the swifts and the tyrant fly catchers, on the taxonomic values of the tendinal perforations of the tarsus in birds, and on the modifications and taxonomic value of the tongues of birds. He has also commenced a study of the osteology of *Zeuglodon cetoides* and of the cranial characters of the finches and tanagers.

Specimens of birds in alcohol have been lent to Mr. Hubert Lyman Clark and to Mr. W. P. Pycraft in connection with their studies of the embryology and pterylography of birds, and other material belonging to the department has been transmitted for investigation and comparison to Prof. E. D. Cope, Dr. C. S. Huntington, and Prof. H. F. Osborn.

Several papers by the author, based on Museum material, have been published in the Proceedings of the National Museum, the "Ibis," the "Auk," and in "Natural Science."

The chief drawback to satisfactory progress in this department, as in many of the other departments, is lack of space. Mr. Lucas has, however, several plans for future work laid out, and these are best given in his own words:

> Little can be done for the improvement of the study series, owing to lack of room, but there are many specimens, especially among the birds, which need to be transferred to proper boxes and labeled, and this will be done as fast as opportunity offers, while such specimens as can be cleaned will be added to the study series.

The collection of fish skeletons is in bad shape owing to cramped quarters; but little or nothing can be done with it, although it is hoped that a little room may be made available by placing material now in the study series on exhibition in the cases recently placed above the wall case.

Much can be done to improve the exhibition series by providing more descriptive labels, and there are some gaps in the series of skeletons, especially among the fishes and reptiles, that it is hoped may be filled. There are various series of specimens which may be either introduced or added to, among them that commenced during the year showing the modifications of the dermis and epidermis. A very important series which it is hoped may be commenced soon is that showing the morphology of the bones of the mammalian ear and hyoid. Another important piece of work which has merely been begun is the representation of extinct forms in the series of skeletons. It is desirable that this should be done in order that the relations of existing animals may be properly understood, and it is proposed to introduce in their proper places typical fossils or casts of fossils, supplemented by figures of the entire skeleton, these to be accompanied by suitable explanatory labels giving the anatomical characters, affinities, and geological range of the various orders or other groups. It is also desirable to extend the tooth series, the series of domesticated animals, and above all the synoptic series of invertebrates.

In this connection the curator would call attention to the fact that the care of the fossil vertebrates takes much of his time, and that the time of the one preparator and one skilled laborer allotted to the department of comparative anatomy is very largely occupied with work for the departments of mammals and paleontology.

The first and last entries in the various catalogues of the department are shown in the following table:

	Last entry June 30, 1894.	Last entry June 30, 1895.	Increase.
Mammals	49381	49419	38
Birds	19287	19393	106
Reptiles and batrachians	29362	29382	20
Fishes	26176	26185	9
Total	.....	.....	173

DEPARTMENT OF PALEONTOLOGY.

It has for many years been felt desirable to centralize all the paleontological collections under one general administration, but not until the present fiscal year has it been found possible to effect the necessary arrangements. Hon. C. D. Walcott, Director of the U. S. Geological Survey, has accepted the honorary charge of all the paleontological collections, with Mr. Charles Schuchert as assistant curator. The several divisions of the department which have heretofore existed still remain, with one exception, under the charge of the same officers who have hitherto controlled them. The principal object gained by the change is that all paleontological material, as soon as it arrives at the Museum, is assigned to the main department, thus securing a better system of record than formerly, and thence it is assigned to the special division or divisions of the department to which it belongs. It will now also be possible to bring the work incident to the installation of all the paleontological material under one uniform system, and at the same time to

relieve several of the custodians of the necessity of attending to the details of this work.

The personnel of this department now includes Hon. C. D. Walcott as honorary curator, with Mr. Charles Schuchert as assistant curator. The vertebrate fossils are still under the charge of Prof. O. C. Marsh, although the actual work on these collections has been performed by Mr. F. A. Lucas. The invertebrate fossils are divided among Mr. Schuchert, Mr. T. W. Stanton, and Dr. W. H. Dall, while the fossil plants remain under the general supervision of Prof. Lester F. Ward, with Mr. F. H. Knowlton and Mr. David White as custodians of the Mesozoic and Paleozoic collections, respectively.

Dr. Charles A. White, who for many years has personally had the entire charge of the Mesozoic collection of invertebrate fossils, is now largely relieved of this work by Mr. Stanton. Dr. White has been designated "Associate in Paleontology." The Museum owes a large debt of gratitude to him for his efficient work on the Mesozoic collection of invertebrate fossils, and it is a source of congratulation that the advantages of his advice and honorary connection with the Museum are to be continued.

The increase in and the scientific value of the paleontological collections received during the year are regarded as very gratifying, especially in the case of the vertebrate fossils. This collection, under the curatorship of Prof. O. C. Marsh, of Yale College, has been increased by the addition of about 65 specimens. Among the more important of these is a large collection of bones of Zeuglodon gathered in Mississippi and Alabama by Mr. Charles Schuchert. Thirty vertebræ of Zeuglodon were also obtained, in exchange, from the Agricultural and Mechanical College, Agricultural College, Miss. In addition, Mr. Schuchert collected a large number of specimens of Middle Devonian corals from Moreland, Ky. A skull of bison from the Kansas gravels was presented by Dr. A. G. Chase, and a skull of *Portheus molossus* by Mr. E. E. Howell. Casts of a number of fossils have been obtained by exchanges with the Museum of Natural History in Paris, the La Plata Museum, and with Mr. Henry A. Ward, of Rochester, N. Y. A cast of a skeleton of *Pelargosaurus typus* was acquired by an exchange with the University of Caen, France, and an excellent specimen of *Ichthyosaurus* from Lyme Regis, England, was received in exchange from the Wagner Free Institute, Philadelphia, Pa.

A small series of fossils has been placed on exhibition, and a number of large casts placed on the walls or on the tops of the wall cases. From the collection of bones of Zeuglodon a restoration, more than 50 feet in length, has been made for exhibition at the Atlanta Exposition. This will be added to the exhibition series after its return to Washington. The many casts of vertebrates in foreign museums received during the year are of great value for comparative and decorative purposes. Although the exhibit of this section of the paleontological department is but small, it has already attracted much attention, and

the casts and fossil bones of large vertebrates are a constant source of wonder and interest to visitors. A loan of the type of *Aceratherium occidentale* was made to Prof. H. F. Osborn for use in his studies of the extinct species of rhinoceros in North America. A large number of specimens received previously have been catalogued only during this year. These, together with the entry of material received in 1894–95, make a total of 283 entries in the catalogue, the last number taken up in June, 1894, being 1635, and in June, 1895, 1918.

One of the most important accessions to the department of paleontology, from the standpoint of scientific value, is the collection of Tertiary insects from Colorado and Wyoming, received from the U. S. Geological Survey. The greater part of it has already been described and illustrated by Prof. Samuel H. Scudder in Monograph XXI of the Survey.

The magnificent collection of fossil plants, including also some fossil fishes, presented by Mr. R. D. Lacoe, of Pittston, Pa., has been referred to in previous reports. The removal of the collection to Washington was placed in the hands of Mr. David White, who has pushed the work rapidly forward with untiring and intelligent perseverance. The sixth installment has been received during the year. This consisted of two boxes of fishes from New Jersey, three boxes of Cretaceous and Tertiary plants, and 43 boxes of Paleozoic plants.

It is expected that additional material will be received during the coming year, and in the Report for 1895–96 a more extended reference will be made to the character and contents of this exceedingly valuable collection.

Much has been accomplished toward housing and arranging the material. During the year 104 boxes have been unpacked, and with the specimens received in former years this collection fills the 600 drawers purchased for the collection, to which the two south tower rooms are devoted. The arrangement and installation of the material has been performed by Mr. David White.

A large collection of Middle Cambrian fossils from British Columbia, fossil plants from Rhode Island and Massachusetts, and fossil fishes, plants, and insects from the Triassic in Massachusetts, have been received from the U. S. Geological Survey. Mr. R. A. Blair, Sedalia, Mo., has presented 60 specimens of Lower Carboniferous fossils, including several specimens of a well-preserved graptolite (*Dictyonema*). Their occurrence extends the known range of these coelenterates into the base of the Lower Carboniferous. This is a matter of considerable scientific importance, as graptolites had not hitherto been known to occur above the Middle Devonian.

The exhibit of the paleontological material is contained, so far as at present prepared, in the southeast court, which has been again opened to the public. A new and more appropriate entrance to the court was cut through the south wall, and the eastern one closed. The former

crowded condition of the court was relieved by removing the plants and vertebrates from the slope-top cases to the wall cases, allowing eight slope-top cases to be discarded. Thirty-two of these cases remain for the exhibition of invertebrate fossils. The plants and vertebrates are being arranged in the wall cases, with the four corners of the room occupied by large slabs of tracks, standing on screens. All the fossil insects in the department have been assembled and appropriately mounted with figures on tiles. This collection is now on exhibition in a flat-top case.

Considerable time has been expended in caring for the paleozoic collections of the Geological Survey, 20 boxes having been unpacked and the specimens washed and provisionally assorted.

Work on the paleozoic plants will be pushed to completion by Mr. David White, on his return to Washington. The exhibits of the mesozoic and cenozoic plants are nearing completion, and the manuscript for the labels is nearly ready for the printer. Three additional cases are required by Professor Ward, which, with the 7 already assigned, will permit of 5 being devoted to the Lacoe collection of paleozoic plants and the other 5 to mesozoic and cenozoic plants. If sufficient cases can be provided, it will no doubt be possible to install an exhibit of vertebrate fossils, under the supervision of Mr. Lucas, which will prove very attractive and instructive.

The invertebrate fossils exhibited and stored in the 32 slope-top cases will require much labor in connection with the selecting, mounting, and working up of nearly 400 boxes now in storage. Much of this material in storage is the property of the Geological Survey, but is all at the disposal of the Museum as soon as an opportunity occurs to work it up.

The study series practically remains in the same condition as formerly This collection also requires much work to remove the duplicate material and to clean and enter upon the Museum registers all material desirable for the permanent collections.

Mr. Schuchert has continued his studies of fossil Brachiopoda, and it is hoped that a paper resulting from this work, to be entitled "Synopsis of North and South American Fossil Brachiopoda, including Bibliography and Synonymy" will soon be ready for publication. The special studies of Dr. Dall are referred to under the head of the department of mollusks.

Material in the custody of this department has been lent for study to Prof. John M. Clarke, Albany, N. Y.; to Prof. William B. Clark, Johns Hopkins University, and to Prof. J. F. Whiteaves, of the Geological Survey of Canada. Fossils have been sent to Mr. E. O. Ulrich, of Newport, Ky., and to Prof. John M. Clarke for identification, and the Museum is under obligations to these gentlemen for their courtesy in this connection.

Although there is a great quantity of most interesting material for study and description on hand in all of the various collections of this

department, there has been afforded very little opportunity for the preparation of papers for publication during the year, on account of the large amount of preliminary work necessary in the way of arrangement and classification. Mr. Knowlton has, however, published five papers relating to paleobotany, and in them one new genus and seven new species are described.

The number of specimens received during the year, so far as they can be counted, is upward of 6,642, not including the Lacoe collection of 44 boxes, and the collection of bones of Zeuglodon.

The last entries in the several catalogues of the department for the fiscal years 1893–94 and 1894–95 are as follows:

	1893–94.	1894–95.	Number of entries.
Paleozoic fossils	24665	25598	933
Mesozoic fossils	23009	23016	7
Cenozoic fossils	1159	1269	110
Fossil plants	3767	4227	460
Total			1,510

DEPARTMENT OF PLANTS (NATIONAL HERBARIUM).

The most important matter affecting this department was the formal transfer of the Herbarium from the Department of Agriculture to the National Museum building. This was the result of correspondence between the Assistant Secretary of Agriculture and the Acting Secretary of the Smithsonian Institution. Copies of the letters are here presented. The history of the growth of the Herbarium will interest many, and a brief statement relative to the same is here given.

At the time when definite lines of policy were adopted in order to secure the expenditure of the income of the Smithsonian Institution in such a manner as most effectually to carry out the intention of the founder in his purpose of promoting the "increase and diffusion of knowledge among men," it was determined to make no appropriation of the funds to further or support any object which could be equally well accomplished by some other agency. In pursuance of this policy an arrangement was effected with the Commissioner of Agriculture to transfer the National Herbarium of the Institution to the care of the Department of Agriculture. The Herbarium then contained 15,000 to 20,000 specimens from all parts of the world, properly classified and labeled. These specimens were the result of various expeditions of the Government and of special explorations carried on under the auspices of the Institution. The collection had from the first been under the care of Dr. Gray and Dr. Torrey, who served without compensation. Upon their retirement the desirability of employing a competent botanist became obvious. On account of lack of money, however, it was not possible to make the position a salaried one, and therefore it became

necessary to seek some other means of providing for the care of the collection. The Department of Agriculture was, as already stated, asked to assume this responsibility. It consented, with the understanding that the appointment of the botanist to be placed in charge should be approved by the Secretary of the Smithsonian Institution, that the collections should be accessible to the public for practical or educational purposes, and also accessible to the Institution for scientific investigation. It was further agreed that full credit be given to the Institution in the publications of the Department for the deposit of the original specimens as well as for such additions as the Institution might make from time to time.

The following agreement was formally signed by the Commissioner of Agriculture and the Secretary of the Smithsonian Institution:

First. All the botanical specimens in the possession of the Smithsonian Institution, about 20,000, and all that may hereafter be collected by it, shall be transferred to the Agricultural Department on the following terms:

1. That a competent botanist, approved by the Institution, shall be appointed to have charge of the collection.

2. That the collection shall, at all times, be accessible to the public for educational purposes and to the Institution for scientific investigation, or for supplying any information in regard to plants that correspondents may ask for.

3. That due credit be given to the Institution in the report of the Agricultural Department for the original deposit and for such additions as may be made to it, from time to time, by the Institution.

Second. That the Agricultural Department shall transfer to the Smithsonian Institution any specimens it may now have, or may hereafter obtain, that are not necessary to illustrate agricultural economy, such as those of ethnology and of various branches of natural history, similar credit to be given in this case as required in the former.

The transfer was made in 1869, and the conditions were fulfilled. Dr. Parry was appointed botanist, and at once commenced a systematic arrangement of the Herbarium. He found the number of species to be about 15,000, included in 25,000 specimens. The most valuable portions of the Herbarium thus transmitted by the Smithsonian Institution to the Department of Agriculture were:

1. The plants collected by the exploring expedition under Admiral Wilkes (1838–1842). The botanists of this expedition were Mr. William Rich, Dr. Charles Pickering, and Mr. W. I. D. Brackenridge.

2. The collection of plants made by Mr. Charles Wright during the North Pacific Exploring Expedition, under Commanders Ringgold and Rodgers (1853–1856).

3. The plants collected by the naturalists who accompanied several surveying parties which made explorations for the route of a Pacific railroad.

4. Collections made during the survey for the Mexican boundary by Dr. C. C. Parry, Dr. J. M. Bigelow, Mr. C. Wright, Prof. George Thurber, and Mr. Arthur Schott.

5. Numerous contributions to the North American portion of the

Herbarium, also plants from British America, Japan, Mantchuria, China, Sandwich Islands, Mexico, Jamaica, Cuba, Venezuela, Brazil, and Paraguay; also from Hungary, Illyria, and other parts of Europe. Collections were also received from the Imperial Academy of Science at St. Petersburg and from the Imperial Botanic Garden.

During the twenty-six years following the transfer, up to the year 1894, many large and valuable accessions have been added, a large proportion of which was received by the Department of Agriculture. The Herbarium now contains not less than 275,000 specimens.

The fact that the Herbarium was not housed in a fireproof building has been the occasion of criticism, and during the session of the Botanical Congress in Madison, Wis.,[1] this subject was discussed and the following resolutions drafted:

Whereas the National Herbarium, with all its wealth of specimens of inestimable value, is at present deposited in a building which from its construction and use is peculiarly liable to destruction by fire; and

Whereas such destruction would be an irreparable loss to the science of botany; therefore, be it

Resolved, That we, the members of the Madison Botanical Congress, hereby appeal to the Senators and Representatives of the National Congress to make early provision for a suitable fireproof building for the preservation of this scientific treasure, and we would respectfully request the Secretary of Agriculture to urge upon Congress the desirability of prompt action in this matter.

Actuated, no doubt, in part by the sense of responsibility involved, the Assistant Secretary of Agriculture in a letter, having the approval of the Secretary of Agriculture, dated July 24, 1894, and addressed to the Secretary of the Smithsonian Institution, after recognizing the Institution as the lawful custodian of the scientific collections of the Government, requested the transfer of the Herbarium to the immediate custody of the Institution. To this the Institution assented, in a letter dated July 28, 1894, signed by the Acting Secretary. A third letter, addressed by the Secretary of Agriculture to the Secretary of the Smithsonian Institution, dated August 16, 1894, directed the transfer of the Herbarium. The actual removal of the collection was effected in September, 1894.

Mr. Frederick V. Coville, botanist of the Department of Agriculture, has succeeded Dr. George Vasey as honorary curator of the department of botany, and in this capacity is in charge of the National Herbarium. Dr. J. N. Rose, of the Department of Agriculture, has been appointed assistant curator.

The correspondence above referred to is here presented:

FROM THE ASSISTANT SECRETARY OF AGRICULTURE.

JULY 24, 1894.

SIR: The Smithsonian Institution, as we understand it, is designated by law the custodian of all of the scientific collections of the Government. This Department has already transferred many collections, parts of collections, and specimens to the care of your Institution, and will, it is hoped, continue to do so from time to time.

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[1] August 23, 1893.

The collection of plants known as the National Herbarium has been left in the immediate charge of this Department, the expense of its care, maintenance, and extension being annually provided for in our appropriations.

This collection is, we are informed, a very valuable one, especially since it contains a great number of "type specimens" from the Fremont, Wilkes, and other expeditions, and deserves to be housed and cared for in the most reliable and efficient manner. It is at present located in the offices of the division of botany in the main building of the Department of Agriculture. As is well known, this building is not fireproof, and is considered to be unsafe for other reasons

I write, therefore, with the approval of the Honorable Secretary, to ask the Smithsonian Institution to provide a place for this collection. Being desirous of relief from further responsibility for the safety of this collection, which is connected only in part with the work under our charge, we feel that we have a right to make this request of your Institution.

Since the botanist of the Department of Agriculture is also curator of the Herbarium, and since an assistant curator and several clerks and laborers are provided to work on it, this Department would expect to continue, through these legally appointed officers, to do all necessary work upon the herbarium, and must, for this purpose, have full access to it.

In addition to the space required for the Herbarium proper, several rooms will be required for the accommodation of these workers and some storage space for duplicate specimens. The details of these matters will be explained by the botanist. This Department would expect to have the privilege of removing to its building from time to time any portion of the Herbarium that may be required for study in connection with its work. The working collection of fungi in the division of vegetable pathology and the collections of the division of forestry, having been made independently of the Herbarium and its appropriations, are not considered a part of it and are not offered for transfer at this time. The grass collection of the Herbarium will also be needed at this Department for the present.

If desired, the cases and like furniture can be transferred with the collection.

Respectfully yours,

CHAS. W. DABNEY, JR.,
Assistant Secretary.

The SECRETARY, SMITHSONIAN INSTITUTION,
Washington, D.C.

FROM THE ACTING SECRETARY OF THE SMITHSONIAN INSTITUTION.

JULY 28, 1894.

SIR: I am in receipt of your letter of July 24, asking the Smithsonian Institution to relieve the Department of Agriculture from the responsibility for the safety of the collections of plants known as the National Herbarium, by providing a place for it in a fireproof building.

I appreciate fully the value of the National Herbarium, and although all the buildings under the charge of the Institution are already overcrowded, I find that it is possible, by still further condensing, to assign to the collections of plants which you offer to transfer, together with those already here, a space on one of the balconies in the new Museum building with the adjoining laboratory rooms, which, though inadequate for its proper reception will, in a certain way, meet the necessities of the case, and which has at least the recommendation of being free from the danger of fire.

If the cases and other furniture referred to in your letter can be transferred to the Museum, I see no reason why the plants may not be received at any time that may suit the convenience of the Department.

I understand it to be your purpose that the botanist of the Department of Agriculture shall retain the position of honorary curator of the botanical collections in

the National Museum, which he now holds by courtesy of the Department of Agriculture and by commission from the Secretary of the Smithsonian Institution. This is very acceptable, as is also your proposition that certain other employees of the Department of Agriculture shall continue to work upon the herbarium under his direction. While the Institution is prepared to provide a safe place for the herbarium and preserve it from deterioration, it can not at present assume any expense for maintaining and enlarging it. I speak of this for the purpose of emphasizing the fact that if the herbarium is to fulfill its function of continued usefulness to the Department of Agriculture, it will be necessary that the Department shall contribute to its maintenance as in the past. In order to render this possible, the work-rooms already referred to will be available to accommodate the persons engaged in this work under the direction of the botanist.

Every facility will be afforded to the Department for the use not only of the Herbarium to be transferred, but of all the other botanical material and collections in the Museum, together with the extensive botanical library belonging to the Institution. Portions of the collection of plants may be withdrawn for study upon the request of the botanist of the Department of Agriculture, so far as is consistent with their safe-keeping and proper use.

I note what you say in regard to the collections in the divisions of vegetable pathology and forestry, and have no comment to offer. The situation is, however, different in regard to the grasses, for, since they constitute part of the herbarium proper, and a considerable portion of them have been deposited with the Department of Agriculture by the Smithsonian, it seems to me that this fact should be recognized, and that the custody of the grasses should be transferred to the Institution with the rest of the herbarium, although, in accordance with the terms of the agreement just stated, it is proper that as much of this collection should be retained at the Department as is needed for the work in progress. I would suggest, however, that a full series of the grasses be sent to our fireproof building as soon as practicable, so that in case of fire a portion of this valuable collection may be saved.

If, when you are ready to make the transfer, you will, as you suggest, request Mr. Coville to confer with me, I will do all in my power to have the new space arranged so as to provide in the best way for the interests of the work.

Yours very respectfully,

G. BROWN GOODE, *Acting Secretary.*

Hon. CHARLES W. DABNEY, Jr.,
Assistant Secretary of Agriculture, Washington City.

FROM THE SECRETARY OF AGRICULTURE.

AUGUST 16, 1894.

SIR: I have the honor to inform you that, in compliance with the arrangements made through correspondence with the Honorable Assistant Secretary of Agriculture, I have this day directed the botanist and curator of this Department to proceed to remove the National Herbarium, its furniture, and persons engaged in working thereon, or so much thereof as you may be able to accommodate, to the space which you have kindly provided for it in the National Museum.

Respectfully yours,

J. STERLING MORTON, *Secretary.*

The SECRETARY OF THE SMITHSONIAN INSTITUTION.

In his report for the year ending June 30, 1895, the curator, speaking of the more important accessions of the year, mentions 6 which were received through the Smithsonian Institution and 45 which came direct to the Department of Agriculture and are now deposited in the herbarium. References to these and all other accessions to the Herbarium will be found in the Accession List (Appendix II). The total

number of specimens received and added to the Herbarium during the year was 16,897. For the last half of the year the curator has included only those specimens which were actually placed in the collection. Previously all specimens received had been counted.

The space now occupied by the Herbarium is the east balcony of the Museum building, with a floor area of 12 by 62 feet, four tower rooms, each 12 by 10 feet, and two anterooms, each 8 by 10 feet. Mr. Charles Louis Pollard, of the Department of Agriculture, assists the curator and assistant curator in the administration of the collection.

A complete revision of the Herbarium has been found necessary since the transfer to the Museum building was made. New labels have been added, and the determinations of species have been carefully examined with a view to the correction of any errors. This revision has already extended to the Rubiaceæ, and it is expected that it will be completed during the coming fiscal year.

The transfer to the main Herbarium of the collection hitherto stored on the south balcony of the Museum building has also been commenced. The dicotyledonous trees and shrubs, genera represented in a fossil state, and the plants collected personally by Prof. Lester F. Ward, who is in charge of the collection of fossil plants, will, however, be retained for use in the department of paleontology.

A series illustrating the flora of the District of Columbia will be placed in a separate case, where it will be generally accessible to students.

Dr. Rose has undertaken the work of selecting and marking all the type and cotype specimens in the Herbarium. The sheets to which these specimens are attached are taken out, marked with a red label, placed in a red folded cover, and then returned to their proper place in the collection. During the year 46,565 specimens have been mounted. A large part of this number consisted of specimens received in previous years, but not before mounted on account of lack of facilities for the work.

A revision of Prof. Lester F. Ward's "Guide to the Flora of Washington and Vicinity" has been commenced by Professor Ward and Mr. Pollard. Other Washington botanists will assist in special groups. Monographic work for the "Systematic Botany of North America" has been commenced by the curator, Dr. Rose, and Mr. Pollard. Dr. Rose has completed and published a report on the Mexican collections gathered by Mr. Edward Palmer in 1890 and 1891. He has also continued the identification of parts of the collections obtained by Mr. C. G. Pringle and Mr. E. W. Nelson in Mexico. Mr. Coville, in cooperation with Mr. John B. Leiberg, has identified a large collection of plants made by the latter in 1894 on the plains of eastern Oregon.

The field agents of the Department of Agriculture have contributed a large amount of material from Utah, Arizona, Nevada, Oregon, and Alaska.

Several collections or parts of collections have been sent to specialists for study. These are mentioned under the head of "Material lent for investigation." The curator names six botanists who have had access to the herbarium during the year, to aid them in special investigations. He also gives the names of 23 persons who have cooperated with the department, especially by lending specimens for critical investigation or by themselves assisting in the identification of species.

In the Bibliography (Appendix IV) will be found the titles of all papers published during the year by the curator, the assistant curator, Mr. Pollard, and two other collaborators, Mr. John M. Coulter and Mr. L. H. Dewey. In the supplements to the Bibliography are included the names of the new genera, subgenera, species, and subspecies described in those papers.

Among the propositions which the curator submits in his report for the better administration of the herbarium, is a plan for affording increased case room and the transfer of the remainder of the herbarium to the Museum building. This is evidently desirable, and everything possible will be done to meet Mr. Coville's wishes in this respect. He also recommends the employment of an assistant in cryptogamic botany, to properly classify and arrange the Pteridophyta, Bryophyta, and Thallophyta.

The last catalogue entry in June, 1894, was 2761, and in June, 1895, 3431.

DEPARTMENT OF MINERALS.

This department continues under the care of Prof. F. W. Clarke, chief chemist of the U. S. Geological Survey.

The accessions to the collection of minerals have not been as numerous as during the previous year. The actual number of specimens received was 1,053, embracing 140 accession numbers. The most important of these were contributed by Rev. L. T. Chamberlain and included, among others, the following specimens: Twenty specimens of minerals, including garnet, beryl, quartz, agate, thomsonite, chlorastrolite, and sodalite from various localities, a carved ornament of quartz from Japan, 2 specimens of quartz with inclusions from the same locality, a specimen of turquoise in gangue from New Mexico, a carbuncle of garnet, 6 Amazon-stone balls, 5 chrome iron balls, 3 cut and polished specimens of quartz, an opal from Queretaro, Mexico, a gold nugget from California, and 2 specimens of tourmaline from Mount Mica, Paris, Me. These were presented to the Smithsonian Institution and deposited in the National Museum. There were also received from Dr. Chamberlain, from the bequest of Mrs. Frances Lea Chamberlain, 12 Tassi paste reproductions of antiques.

From the U. S. Geological Survey have been received 8 accessions of more than usual value. Three important lots of minerals were acquired by exchange. The names of all the contributors to the collection are mentioned in the Accession List.

Considerable progress has been made in supplying the exhibition series with labels. The cases have been numbered and labels attached. These indicate the plan of arrangement and the location of the material. Experiments have been made with a view to determining the best method of mounting crystals and preserving specimens which are liable to decomposition. A special set of specimens, designated the "educational series," is being prepared for exhibition. The collections of gems and meteorites are increasing very satisfactorily. Two collections of minerals have been made by Mr. Wirt Tassin, assistant curator, aggregating more than 200 specimens. These have been suitably distributed among the exhibition and study series. The field parties of the United States Geological Survey brought in much interesting material.

Four papers by the curator were published during the year—one as a bulletin of the Geological Survey, two in the American Journal of Science, and one in the Journal of the American Chemical Society. These are mentioned in the Bibliography (Appendix IV).

It is the hope of the curator to establish a series of specimens illustrating typical famous American localities, and also a series illustrating the type and original material in the collection, accompanied by references to the publications in which the material was described. The preparation of a guidebook to the collection has been commenced by Mr. Tassin.

The last catalogue entry in June, 1894, was 83320, and in June, 1895, 83613.

DEPARTMENT OF GEOLOGY.

There is pressing need of more exhibition space for the geological collections, and owing to the crowded condition of the halls very little can be added to the exhibition series. The present aim of the curator, Mr. George P. Merrill, is therefore in the direction of eradicating the poorer specimens and substituting better ones in their places. For this reason probably not more than 200 specimens have been actually added to the exhibition series during the year. Mr. Merrill repeats his recommendation that a balcony be placed around the interior of the southwest court, of sufficient capacity to hold some of the lighter and least bulky of the collections. This would allow room on the floor for the expansion of the other collections in this department. Unfortunately, Congress has not taken favorable action on the request for permission to erect galleries, and until this point has been secured, nothing can be done to relieve the pressure either in this or the many other departments which are similarly hampered.

The time of the curator and his assistant has been largely occupied in bettering the condition of the exhibition series, as already intimated, and in bringing the records of the department down to date. A card catalogue for the collections is being prepared, and manuscript for

nearly 1,000 new labels has been written. The systematic collection of rocks has been entirely rearranged, and the labels of the building stone collection renewed. A large quantity of duplicate material has been sorted out to be used in making up the next sets of specimens for distribution. The curator has, in addition to the large amount of routine work accomplished, found time to bring to completion his investigation relating to the mineral nature and cause of fibrous structure of the various minerals commercially grouped under the name "Asbestos." He is also engaged in a series of investigations relative to the phenomena attending rock decomposition. A brief paper on this subject, as illustrated in the region about Washington, has been published during the year in the Bulletin of the Geological Society of America. The title of this and five other papers by the curator, and of one by Mr. C. Whitman Cross on "The Laccolitic Mountain Groups of Colorado, Utah and Arizona", in which are described some rocks in the Museum collection, will be found in the Bibliography (Appendix IV).

The accessions of the year numbered 79, and in addition 122 lots of specimens were received for examination and report. The most important of the former are: A systematic series of Stassfurt salts, presented by the German Kali Works (Nassau street, New York City); a series of specimens of photographs of borax salts, mines, and works, presented by the Pacific Borax Company (San Francisco, Cal.); a series of granites, marbles, alabaster, etc., from Egypt, collected for the Museum by Mr. F. W. Crosby; a large quantity of Uintahite, from Clear Creek, Utah, received from Mr. B. W. Rice, Tucker, Utah; a block of meerschaum from Eski Shehr, Asia Minor; a series of soapstone, asbestos, apatite, and fresh and decomposed rocks illustrating weathering, collected by the curator in Nelson and Albemarle counties, Va.; onyx from Lake Oroomah, Persia, presented by Rev. S. G. Wilson, Tabriz, Persia; a series of remarkable spherulites from the Silver Cliff region, Colorado, presented by Mr. C. Whitman Cross; a series of silver ores from Custer County, Colo., transmitted by the U. S. Geological Survey, and a large nodule of gum copal, weighing $8\frac{1}{4}$ pounds, from the Upper Congo region in Africa, obtained by Mr. J. H. Camp, Lima, Ohio, who collected for the Museum while engaged as a missionary in the service of the American Baptist Missionary Union.

The present condition of the collection is indicated by the following figures:

Exhibition series	22,435
Study series	28,411
Microscopic slides	4,000
Duplicates of all kinds	12,000
Total	66,846

The last catalogue entry in June, 1894, was 62393 and in June, 1895, 62731. It should be remarked in this connection that an entry in the catalogue does not by any means necessarily indicate the addition of

only one specimen, since a specimen may be broken up into a hundred or more pieces, each of which would in a strict count be properly regarded as a separate specimen.

DEPARTMENT OF ETHNOLOGY.

The curator, Prof. Otis T. Mason, reports that the accessions of this year compare very favorably with those of previous years. Many additions have resulted from gifts received from foreign exhibitors at the World's Columbian Exposition. Among the most important accessions may be mentioned a rare collection of 662 specimens, illustrating the divinatory games of various peoples, from the University of Pennsylvania; a very valuable series of specimens from eastern Turkestan, collected and presented by Dr. William L. Abbott, through whose generosity several of the departments in the Museum have been enriched both in this and in previous years; a large collection from west Africa, presented by Mr. J. H. Camp and illustrating the arts and industries of several native tribes; an extremely valuable lot of ethnological objects from the region of Mount Kilima-Njaro, collected and presented by Mr. William Astor Chanler; a collection from east Greenland, gathered by Captain Holm and transmitted in the name of the Museum of Royal Antiquities in Copenhagen, and a collection of nearly 700 articles illustrative of the native life and arts of the Congo Free States, secured by purchase from Mr. Dorsey Mohun. The Bureau of Ethnology has contributed a most important series of objects collected by Mr. W J McGee among the Papagos and Seri Indians in southwestern Arizona and northwestern Mexico.

The already overcrowded condition of the exhibition space assigned to this department has rendered it necessary to place in storage most of the recently acquired material, and, to partially accommodate it, the lower rooms of the west balcony have been provided with shelving. Here it is proposed to store unit boxes, swinging screens, and mounted pictures. In the north storage room will be kept the reserve and study series illustrating the ethnology of Asiatic and North African tribes. The third story of the north tower is devoted to Eskimo material. A card catalogue of the entire exhibit is being prepared.

Regarding the exhibition series, the curator remarks:

The exhibition series in the department of ethnology at the close of the fiscal year was to be found in two groups—the material actually on exhibition for public inspection and the exhibition series returned from the Chicago Exposition, which had been filed away for future use. A great many of these were also designated to be sent to Atlanta. The series actually displayed is exhibited under two motives—the first that of technology, the second that of ethnology. Wherever the material is sufficiently abundant, and from a great number of localities, the whole of mankind are considered to be of one species, and all objects belonging to a certain class are assembled and arranged for the purpose of showing their historical elaboration and their geographic distribution. This is called the technographic series. However, where there is a large mass of material of great variety from many peoples and not exclusively collected from any one, the specimens are displayed at present in

ethnographic groups and arranged around the hall. There are sections devoted to Negroid Africa, Caucasian peoples in Africa and Asia, the peoples of eastern Asia, including Siam, Burma, Japan, Korea, Thibet, and the Ural-alta group.

This arrangement enables the curator to place before the public, at least in its proper national and geographic connection, desultory material from all parts of the world. As regards the American collection, a great change has been proposed—to set apart the northwest range for the continent of America, a special exhibit to be made of the Pueblo region in the northwest court. This plan has only been partly carried out.

The curator has made a special study during the year of primitive methods of travel and transportation, and a paper by him on this subject is printed in the Report for 1894.

Material in the Museum has been lent for study to Mr. Stewart Culin, director of the Museum of Archæology and Paleontology, University of Pennsylvania; to Dr. W. J. Hoffman in connection with his studies of the pictographic work of the Eskimo, and to Mr. J. D. McGuire in connection with his investigations of stoneworking among savage peoples. The use of the drill has been thoroughly studied by Mr. McGuire, and the results are embodied in a very interesting paper published in the Report for last year. Dr. Boas has prosecuted an extended study of the Indians of the Northwest Coast, and a valuable paper by him upon this subject is included in this volume.

The curator has published seven papers during the year, including a study of "North American Bows, Arrows, and Quivers" (printed in the Report of the Smithsonian Institution for 1893). Mr. Walter Hough, assistant curator, prepared a catalogue of the ethnological exhibit displayed by the National Museum at the Columbian Historical Exposition in Madrid, and also a descriptive report upon the ancient Central and South American pottery exhibited in Madrid on that occasion.

Alluding to the special plans which he has in view, the curator makes the following statement:

> The curator commenced at the end of the fiscal year to make a classified catalogue of every ethnological specimen in the collection, with regard to its function, material, and its location, for the purpose of indicating geographically the poverty of the department, especially with reference to American material. For instance, all the stocks of the American race, from Point Barrow to Cape Horn, are arranged alphabetically and in the order of their location. It is proposed to have a separate sheet or column connected with these stocks as they occur, devoted to each of the great typical industries, activities, or apparatus, and to indicate upon these sheets or in these columns whether or not each stock has in use this method or apparatus. As soon as this chart is made out, it can be easily ascertained whether any tribe possesses this or that art, and if the materials and tools connected with the art are not in the National Museum, it will indicate an intelligent line along which collections ought to be made.
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> The curator hopes to devote a great deal of attention to this special research during the next year and to utilize the resources of the establishment, with the consent and assistance of the Director, for the purpose of perfecting the series for America.

There have been 1,270 entries made during the year in volumes 35 and 37 of the catalogue of the department. In volume 35 the entries run from 168855 to 169330, and in volume 37 from 174426 to 175221.

The number of specimens received was 2,642.

DEPARTMENT OF PREHISTORIC ANTHROPOLOGY.

In his annual report the curator, Dr. Thomas Wilson, remarks that the operations of this year have exceeded those of all previous years in the number and extent of the accessions as well as in their scientific value. The most important addition, although not a permanent gift, was the extensive collection of Dr. Roland Steiner, of Grovetown, Ga. It consists of 32,478 specimens from the Etowah mounds and from Burke and Columbia counties, Ga. The value of this collection consists chiefly in the opportunity which it affords for a study of the industries of the aborigines as manifested in their dwellings, burial places, implements, and utensils. The Nicaraguan Government contributed a valuable collection of pottery and stone objects from the exhibit of that Republic at the Madrid Exposition. Mr. John C. Meyer, of Round Top, Fayette County, Tex., presented a large series of rude chipped implements and other objects, including three chipped implements of jasper. Eleven large pottery vases from Argentina were received from the La Plata Museum, through the courtesy of Dr. F. P. Moreno. In addition, the curator makes special mention ot several other accessions, all of which are included in the Accession List (Appendix II).

Several important changes having become desirable in the arrangement of the entire collection, the curator has devoted himself assiduously to this work, and the operations incident to the arrangement are indicated in his own words:

> In order to effect this task, it was necessary to rearrange, geographically, all the objects in 52 cases, according to the various States of the United States and of foreign countries; also to rearrange the objects made by or belonging to prehistoric man, contained in 12 cases. The latter have been arranged in two synoptical series—chronological and geographical—one representing Europe, Asia, and Africa, and the other North America. The objects from Mexico, the West Indies, Central America, and South America were installed in wall cases on the north and west sides of the hall. All of the Pacific Coast objects were segregated and installed in cases by themselves, and the mummies were placed in the long wall cases on the south side of the hall. Two new shelves have been made for each alcove case and 900 specimens of mound pottery placed thereon. The very large specimens were placed above the alcove cases, fronting the aisles, thus giving them a decorative, as well as utilitarian, effect. The prehistoric pottery has been transferred from the Museum building, and the large glass cases of pottery from Peru, Brazil, and from the Arkansas mounds have been installed in the foyer of the hall. A large case containing a group of Indian figures, representing a quarry workshop (?) from Piney Branch, District of Columbia, has also been set up. A number of paintings, drawings, lithographs, and photographs of prehistoric objects have been placed on the walls above the cases. These included a large painting representing the ruins of Spruce Tree House, Mancos Canyon, Colorado, Major Powell's map of the linguistic stocks of North America, and a chronological map adapted to show the distribution of aboriginal mound districts in the United States. Two hundred and forty drawers were constructed and placed in eight sloping-top table cases with frosted glass doors. This work was completed March 19, and since that time the drawers have been utilized for the storage of some 3,500 objects belonging to the collection.

The exhibition series is now so installed that every object can be plainly seen. Labels have been attached to many of the specimens.

The curator has commenced a study of prehistoric pipes and smoking apparatus, and of aboriginal musical instruments. He has also continued special investigations of paleolithic implements, rude notched axes, prehistoric copper, jade and cache implements, and prehistoric Etruscan objects. A paper by the curator on the history of the sign of the Swastika has been completed and is printed in the Report for 1894. Various other objects connected with the existence of prehistoric man in North America have also engaged special attention.

On two occasions specimens from this department were lent for use in illustrating lectures. The pupils of several schools in the city have visited the exhibition hall and received instruction from the curator as to the scope and aims of the exhibit.

Eight papers by the curator, relating chiefly to matters pertaining to his department, have been published during the year. The following remarks, bearing upon the special plans which the curator has in view for the future development of the department, are quoted from his annual report:

> The collections in this department have now increased to 203,520 objects. The benefit to science of such a collection is by enabling the archæologist and anthropologist to write a history of prehistoric man. In ethnological collections and objects relating to primitive peoples of modern times, the study of the people's habits and customs, and the writing of their history, can be done by the historian personally visiting the tribes and obtaining his information at first hand. But in collections relating to prehistoric peoples this can not be done, and we are driven to a study of the implements, objects, monuments, etc., left by them. The student, historian, archæologist, and anthropologist compare these objects (1) with each other, in localities where they have been associated together; (2) with implements from other localities; (3) he compares one locality with another, and (4) all of them together with each other—that is, he first establishes, as well as he is able, a unit of civilization or culture within a given tribe, group, or family; then, by extending his observations, he establishes other units of culture or civilization in other tribes, groups, or families, and these units he respectively compares together, first in a general way, and second, in the details of the implements and objects which go to make them up.
>
> I propose to make from the specimens in my department such a segregation by localities; a division, if possible, by time; also an establishment of units of civilization, and thus make the comparison mentioned, or, rather, afford material for students either now or hereafter to make this comparison of civilizations. This will require the services of a draftsman. As no person can by mere words describe the form of an object, and as the differences of form are, or may be, but slight, and yet mean much, there is greater necessity for graphic delineation than there would otherwise be. The objects have all been made by hand; there never was any special pattern for the workman to follow; each man, to a large extent, made every kind of object, so the differences become more important and the necessity for drawing greater than it would be under other circumstances. It would not be true to say there were no type specimens of the objects made by the aboriginal man, because if he made each one by hazard, as there are a hundred times more implements than styles, some of them must pattern after the others, and thus some implements have come to be considered types. But this, I think, is entirely arbitrary, and is the decision of the modern student rather than the action or intention of the aboriginal workman. In the endeavor to discover his intention, it is necessary to make drawings enough of the implements to show these types and the differences in their details.

During the year 660 specimens were distributed, principally in exchange. Many persons who come into possession of stone implements and are anxious to learn something of their significance send them to the Museum for examination. In 1895 there were received for this purpose 38 lots, aggregating 552 specimens. Reports are invariably transmitted to the senders as soon as the specimens have been examined, and in most instances the latter are returned.

The last catalogue entry in June, 1894, was 169540, and in June, 1895, 172315.

DEPARTMENT OF ARTS AND INDUSTRIES.

At the time when the department of ethnology was established in the National Museum, there were large accumulations of ethnological objects from various sources which could not be regarded as purely ethnic material, not being specially connected with or illustrative of special tribes of men, but which rather formed parts of series of arts scattered over the entire earth. Such arts might be regarded as folk inventions and as illustrating a part of the great scheme of human invention. It was necessary to find a place for these objects, and several special groups, among which they might be properly distributed, were established. These formed what has since been known as the "Department of Arts and Industries." Thus the sections of foods, textiles, fisheries, naval architecture, travel and transportation, the medicines of all peoples, music, and several others, came into existence. In them the objects are arranged under different classes of types, according to their structure, and in each class the objects are further arranged according to a system of historic development and elaboration. The Museum records now show that 14 sections have been organized, although some of these are still without custodians. These are: (1) Naval architecture; (2) transportation; (3) textiles; (4) foods and chemicals; (5) fisheries; (6) animal products; (7) graphic arts; (8) historical collections, coins, and medals; (9) physical apparatus; (10) musical instruments; (11) porcelains and bronzes; (12) materia medica; (13) forestry; (14) oriental antiquities and religious ceremonial objects.

Technological collections.—The first four sections in the enumeration above have been placed in charge of Mr. J. Elfreth Watkins, who, on February 1, 1895, was designated "Curator of the technological collections." To these, other sections will be added as occasion and opportunity may arise. The development of these collections will be slow, inasmuch as objects which were used by man in the foundation of many of the arts are very difficult to obtain. Again, the bulkiness of many objects which would be most desirable, would render them, even if obtainable, too cumbersome for installation, nor could space be assigned for the installation of such relics, owing to the already crowded condition of the Museum halls. In cases where large objects can be represented by models, the curator suggests the construction of small models, varying from one-fifth to one-tenth natural size where it is desired to

show the details of machinery, and from one-twentieth to one-fiftieth where only form and general proportions need to be considered, as in the case of buildings, ships, etc. Scale drawings, photographs, or other representations of objects illustrating the earlier steps in the epoch-making arts, would be desirable. From them small models can be made. These, accompanied by labels containing sketches in outline, explaining graphically such details as are precluded by the limitations of a small model, may be made the means of illustrating the history of the beginnings of the more important American industrial arts. Such a scheme might at first be thought to duplicate to a certain extent the work of the Patent Office in that direction. It will be remembered, however, that the records of that office contain only such documents and models as have been presented for examination and adjudication by persons mainly interested in drawing up claims. This would not interfere with a presentation of the most important epoch-making inventions, such as Henry's electromagnetic sound telegraph.

The curator will endeavor to extend the series illustrating the beginnings of the steamboat. By the addition of a few models to the present collection, the Museum would have a very satisfactory exhibit. He also has in view the preparation of a case containing models illustrating presses and machinery relating to the early steps in the art of printing and paper making.

During the present fiscal year few objects of special importance were received. Among the most interesting were several pieces of apparatus used by Prof. Joseph Henry in his investigations of electromagnetism, which led to the invention of the magnetic telegraph. These had for many years been preserved in the Smithsonian building, but have now been placed on exhibition with other pieces of apparatus used by Professor Henry and deposited in the Museum by his daughters. A special case is devoted to perpetuating the history of the important discoveries in electricity which he made. A model of his first electromagnetic sound telegraph apparatus, made by John Schultzbach, of Washington, under Mr. Watkins's supervision, has been added to the collection, and other models, prepared for exhibition at the Atlanta Exposition, will be installed in the Museum at its close. The curator has not yet had an opportunity to rearrange the collection of models of vessels. Capt. J. W. Collins, who was formerly in charge of this collection, has, since his resignation, been employed by the Museum to prepare a full descriptive catalogue which will serve as a history of naval architecture as illustrated by the models and other objects in the Museum. This work was commenced on April 1. With a view to maturing plans for a systematic rearrangement, a model of the exhibition hall devoted to naval architecture has been made, and also rough models of all the boats suspended from the roof. The work of rearrangement will be advanced as soon as the necessary supports are in place. Many of the boats were taken down, cleaned, and measured

preparatory to their being described by Captain Collins in the catalogue already alluded to. On account of the limited space available for purposes of exhibition, the collections showing the various stages of development in the sewing machine and the typewriting machine, have been placed in storage.

Mr. Watkins has devoted considerable study to the evolution of the various methods of transportation, and, referring to this subject in his annual report, he says:

> During such time as was not consumed by other duties during April, May, and June, 1895, I continued the investigations (which I have been engaged in for several years) of the circumstances which led to the final improvement in the wheel and the other mechanical devices which have rendered the attainment of high speeds possible in the art of transportation on land and water, which have proven such an important factor in modern civilization. The results of these investigations are embodied in the models prepared for the Atlanta Exposition, the drawings for which, together with the superintendence of their construction and the preparation of labels, have consumed much time. Each of the labels for the models illustrating land conveyance contains, in addition to a brief printed description, a small sketch which gives more information at a glance than could be conveyed to the average museum visitor by many printed words. It is my belief that this same idea, extended and modified by the duplication of these sketches by some photomechanical process, may be made extremely useful, not only in connection with museum specimens on exhibition, but for permanent record in catalogues and elsewhere. A series of these illustrated labels, properly arranged, can with a few additions be made to form an illustrated handbook of the collection.

It is proper to make special mention of the assistance rendered by Dr. Francis B. Stevens, of Hoboken, N. J., whose aid in preparing the drawings for the machinery of the models illustrating the early history of the steamboat has been invaluable.

In this connection Mr. Watkins adds:

> Dr. Stevens, a distinguished engineer, now in the eighty-third year of his age, has acquired by observation and practice a fund of information concerning early mechanical history in America of the greatest importance. To have been able to act as the medium for preserving this history through the collections in the U. S. National Museum, I regard as a great privilege.

The help extended by Mr. George C. Maynard in obtaining for the Museum relics and other objects desirable for the collections is also very highly appreciated. Mr. Maynard is associated with several societies which were organized for the purpose of preserving the history of electrical and mechanical inventions in general.

In the general catalogue only six entries have been made during the year, the last number being 191200. The objects pertaining to naval architecture are entered in a separate catalogue book, which is now, as above indicated, being prepared by Captain Collins. Other books are kept for the entry of accessions to the collections of textiles, foods, and chemicals.

The graphic arts collection.—The absence of the curator in Europe during the last half of the fiscal year (January to June) has curtailed the operations of the department, and the following remarks have reference

therefore to what was accomplished during the first six months of the year (July 1 to December 31, 1894).

The principal contributors of specimens were Mr. N. S. Amstutz, Cleveland, Ohio; Mr. J. M. Falconer, Brooklyn, N. Y.; Mr. J. W. Osborne, Washington, D. C.; the United States Geological Survey, and Mr. W. W. Wallingford, Washington, D. C. The entry of the accessions took up 61 catalogue numbers (5501–5561). The most interesting of these are 44 specimens illustrating the transmission of photographs by means of electricity. They were contributed by Mr. N. S. Amstutz, the inventor of the process. A photomechanical color-print was purchased from the United States Aluminum Printing Plate Company, New York, and a book containing chromolithographs was obtained in exchange. The duplicates, which are not included in the above total, have been separated. A catalogue of the specimens on exhibition has been prepared, and also a card catalogue of the whole collection. This is arranged by technical divisions, preliminary to a more systematic arrangement later on.

Materia medica.—This collection is again under the charge of Dr. James M. Flint, U. S. N., who resumed his connection with the Museum May 24, 1895. For several years the collection has been practically complete, and little remains to be done except to replace specimens from time to time with fresh material and to substitute new labels for old. Only five specimens were received during the year. These were recorded under catalogue numbers 142309 to 142313, which is the last entry of the year.

The historical collections.—There is a continually increasing interest shown in objects relating to the history of the United States during the colonial and Revolutionary periods. If sufficient exhibition space were available, the material already on hand would permit a very interesting and fairly complete exhibit in these directions, but unfortunately it is impossible under the circumstances to provide room for more than a limited number of objects, consisting chiefly of personal relics of illustrious statesmen and soldiers.

The most interesting addition to the collections during the year consists of a number of utensils and objects of wearing apparel used in New England during colonial times. They illustrate in a very satisfactory manner the customs and costumes of the seventeenth and eighteenth centuries. The donor is Mr. John B. Copp, Old Mystic, Conn. Among other accessions are: A sword belt presented to Admiral S. D. Trenchard by the Government of Great Britain for his services in rescuing the officers and crew of the British bark *Adieu* off Cape Ann, Massachusetts, in August, 1856; an old Spanish sword of the kind used by the Conquistadores in Santo Domingo; a sword from Puerto Rico bearing the date 1796; early Spanish spurs from Argentina and San Domingo; a collection of early Spanish-Mexican copper and silver coins; a cabinet containing 102 plaster casts of historic medals and

cameos, presented by Rev. Dr. L. T. Chamberlain; a waistcoat supposed to have belonged to Gen. George Washington, deposited by Mrs. J. A. Rodgers, South Bethlehem, Pa.; a canteen carried through the Revolutionary war by John Paulding, one of the captors of Major André, deposited by Gen. R. W. Meade; a collection of South Carolina colonial paper money, and another of silver, nickel, and copper coins of Mexico, Danish West Indies, Great Britain, and Switzerland, received from Mr. A. W. Carey, Adrian, Mich.; a sword and epaulets worn by Capt. Seth Britt Thornton, U. S. A., at Contreras during the last attack on the City of Mexico; decorations and papers of the late Joseph Smolinski, commander of the Imperial Ottoman Order of the Medjidish, Chevalier of the Polish Military Cross, etc., deposited by his son Joseph Smolinski, of Washington, D. C., and a model of the Behaim globe, the original of which was made at Nuremburg in 1487.

In all, 298 specimens were added to the collection during the year.

Collection of musical instruments.—For reasons explained in previous reports, no attempt has yet been made to permanently install this collection, which is now one of the largest in the world. A considerable number of instruments were obtained from several foreign exhibits at the World's Columbian Exposition, and these have been catalogued and either installed in the long wall cases on the east and west sides of the north hall or have been placed in storage.

No accessions of special value have been received during the year. Mention may be made, however, of 2 instruments from Ceylon and 5 from Johore, Malay Peninsula, purchased from the Field Columbian Museum; a native lyre from Congo, Africa, received from Mr. J. H. Camp; a Japanese vertical flute, a transverse flute, and a double whistle from Mr. Simon A. Stern, of Philadelphia, Pa.; a vertical flute from New Hebrides, a horn from Friesland, Holland, a virginal made in 1602 and a Broadwood piano, from Mrs. J. Crosby Brown; a wooden bell, or logo, from Mr. H. J. Moors, of Apia, Samoa; a flageolet and an oboe from Tibet, presented by Dr. W. L. Abbott; a guirro (a sort of whistle), from Puerto Rico, and a tiple (a small guitar), from the same locality, presented by Mrs. Charles B. Smith, of Washington, D. C.

The collections of oriental antiquities and religious ceremonial objects.—These collections are the outgrowth of the establishment of a section of the department of arts and industries in 1888, under the honorary curatorship of Dr. Paul Haupt, of the Johns Hopkins University, for the accumulation and preservation of objects illustrating oriental antiquities and ceremonials connected with religious worship of all kinds. Dr. Cyrus Adler, librarian of the Smithsonian Institution, is in charge of these collections, and under his immediate care they have been arranged. They now occupy four alcoves in the east and west halls, near the rotunda. The north alcove in the east hall contains the Egyptian collections, arranged in eight cases. The Assyro-Babylonian collections are in the south alcove in the same hall, also arranged in eight cases.

In the north alcove of the west hall are the Jewish, Mohammedan, and Græco-Roman religious collections, while in the south alcove, opposite, are arranged the religious objects relating to Brahmanism, Buddhism, and Shintoism.

The principal additions during the year were a Siamese edition of the sacred writings of the Southern Buddhists, presented by the King of Siam; the liturgy of the Bene Israel of Bombay in the Maratha language, presented by Rev. Henry Cohen, Galveston, Tex., and a Japanese temple drum, deposited by Dr. G. Brown Goode. The Museum is also indebted to Mr. R. Dorsey Mohun, United States consul at Zanzibar, for copies of the Koran, a Koran stand, and prayer mats, and to Rev. Henry Cohen for four volumes of Jewish liturgy.

Casts of the Temple stone, Siloam inscription, and twelve Assyrian seals were sent to Rev. C. C. Newton, Tokyo, Japan, in exchange for Buddhistic and Shinto objects.

Much progress has been made in the installation of the objects now on exhibition. This matter is referred to more in detail in the chapter entitled "The development and arrangement of the exhibition series." All of the collections not on exhibition have been rearranged and put in storage cases. The molds and casts have been placed in the basement of the Smithsonian building, where they are safe and easily accessible.

Dr. Adler has commenced a study of Jewish ceremonial institutions. He has also continued his study of ancient oriental seals, and in this work has had the opportunity of examining a large collection of seals belonging to Dr. Frederick Stearns, of Detroit, Mich. Casts were made of 82 of these specimens. He has also completed a paper on the "Cotton Grotto near Jerusalem and ancient Methods of Quarrying." This is based partly on objects which he has presented to the Museum.

It is Dr. Adler's desire to gather a collection of Hittite casts and a series of amulets.

During the year 171 specimens were received. The entries in the catalogue were contained between numbers 154816 and 154990.

IV.—REVIEW OF WORK IN THE ADMINISTRATIVE DEPARTMENTS.

FINANCE, PROPERTY, SUPPLIES, AND ACCOUNTS.

Mr. W. V. Cox, chief clerk, presents, in his annual report, a detailed statement showing the amount of the appropriations for the fiscal year ending June 30, 1895, and the disbursements thereunder; also the disposition of the unexpended balances remaining on hand from the appropriations of previous years. These statements are printed in Appendix VIII.

The work pertaining to the accounts connected with the disbursement of the funds allotted to the National Museum, for an exhibit at the Cotton States and International Exposition at Atlanta, has entailed considerable extra work upon the force of this office during the present year. This work, however, as well as the preparation of orders for materials and labor, has been performed without any additional help.

In the early part of the fiscal year steps were taken with a view to bringing suit against persons who declined to enter into contracts which had been awarded them for furnishing supplies, etc. The opinion of the Attorney-General was sought, and although the Smithsonian Institution has not up to this time been recognized as being entitled to this privilege, the action taken resulted in suits being brought against the defaulters by the Department of Justice.

A board was appointed August 13, 1894, to examine and report upon the safety of the alcohol and alcoholic specimens stored in the basement of the Smithsonian building. Additional safeguards were recommended, and these have been provided.

A new telephone service, with metallic circuits and long-distance instruments, was installed during the year, and although the service is much improved, the annual rental charged is less than that formerly paid.

The chief clerk states that the rules adopted last year for the government of the watch force have been adhered to, and that as a result the force has been brought to a higher state of efficiency.

The committee appointed to consider the subject of an improved system of locks for the Museum cases, submitted its report at the close of the preceding fiscal year, and during the present year preliminary steps have been taken with a view to carrying out the recommendations made.

The quarters occupied for storage having been found too small for the purpose, a new building was leased on the 15th of June of the present year, and the transfer made a short time thereafter.

In February, 1895, an order was issued defining more particularly the duties of the engineer.

The chief clerk makes a statement in his report regarding the records of his office, from which the following is taken:

The originals of all requisitions for purchases, etc., are bound into volumes of convenient size, for ready reference. A record is kept of all bills and vouchers for expenditures on account of appropriations, and every such bill or voucher has a reference to the number of the requisition authorizing the expenditure. Applications for leaves of absence are filed in this office, and a record is kept of those granted, also of all matters pertaining to the personnel of the Museum, except applications for employment, which, after receiving proper action, are filed in the office of the Secretary. Applications for the use of the lecture hall and the stereopticon are also duly recorded. The files of the office contain letters on all subjects pertaining to administrative and financial matters. Letters and documents of all kinds are given a distinctive number, and the letters are carefully indexed under the name of the writer and the subject, the card system being used. When two or more letters relate to one subject, they are given the same number and are filed together. It is intended eventually to enter upon the card catalogue all letters contained in the press-copy books, as well as those received and filed. One series of press-copy books contains letters relating to general Museum business, another contains letters pertaining to the personnel of the Museum, and in still another series are copied letters addressed to the Secretary, transmitting vouchers for payment. There is in this office, also, a record of all legislative matters relating to the Museum, and complete sets of books of estimates, digests of laws, etc.

DIVISION OF CORRESPONDENCE AND REPORTS.

This branch of the administrative work remains under the charge of Mr. R. I. Geare. The force is practically the same as last year, although the occasions upon which it has been necessary to call upon this office for assistance in matters outside of its own work have been much more numerous than in any previous year. There has been an increase of over 1,000 in the number of letters and other official papers prepared for signature, compared with the preceding year.

A special feature of the correspondence has been in the direction of obtaining accessions to the library of the National Museum. Special circular letters were prepared and invitations extended to the State universities, agricultural colleges, and experiment stations, as well as to a number of foreign institutions and scientific societies, to exchange publications with the Museum or to complete partial sets already in the library. The result of the correspondence has been very gratifying.

Circulars have been prepared for transmission to specialists receiving the Museum publications requesting them to send their own writings in exchange, and at the same time inquiring whether our sendings are regularly received, whether they are properly directed, and whether the continuance of their transmission is desired. This information will be of value in revising the mailing lists. It has been thought inadvisable to distribute the circular until it shall be determined beyond doubt what number of individuals and institutions can with certainty be retained upon the lists. This can not be definitely settled until it shall be seen whether Congress is willing to remove the restriction imposed in the printing act of January 12, 1895, limiting the edition of the Proceedings and Bulletin to 1,000 copies, or one-third of the customary number.

Among the numerous records kept in this division, those of greatest importance in connection with the work of the office are as follows:

Two card catalogues showing the course of letters received at the Museum—one, of letters coming to the Museum direct or by reference from some other department or bureau of the Government; the other, of letters referred to the Museum by the Smithsonian Institution. For the more important letters received from the Institution, a separate register is kept by numbers.

In connection with the press-copying of official papers there are ten separate classes of books in constant use, besides several groups of books containing the correspondence relating to expositions, congresses, and other public functions in which the Museum has participated. In addition to the index which each book contains, a general index in the form of a card catalogue is kept. On each card or group of cards is summarized the entire correspondence with each individual or institution. This catalogue, which is estimated to contain at least 35,000 cards, is one of the most valuable records of the office. On it the names of correspondents, as well as of persons whose names occur in the correspondence, are arranged alphabetically. A supplementary catalogue of the names and addresses of foreign correspondents, arranged geographically, is also preserved.

A separate record is kept of the acknowledgments of material acquired by the Museum, of reports upon objects sent to the Museum for identification, and of the transmission of material to institutions and to individuals for purposes of study; and, in addition, a record of the transmission of material to specialists for determination, as well as of exchanges with museums in foreign countries and with individuals. The results of cooperation with the Museum in special directions, on the part of the Executive Departments and bureaus of the Government, are also recorded.

The accession catalogue contains the name and address of each contributor, together with a detailed statement of the nature of the material received, and other useful information, such as the date of entry, the number assigned, etc. The record of material sent to the

Museum for examination and report is similar in scope. These records are published each year in the Annual Report. During the present year a separate record has been kept of material received for exhibition at the Cotton States and International Exposition in Atlanta.

The correspondence with educational institutions regarding the distribution of collections forms the subject of a special catalogue. The cards in this catalogue are arranged alphabetically by States and subalphabetically by cities and towns. A short abstract is given of the contents of each communication received from applicants for collections, and also of each letter sent out from the Museum. All applications for specimens are also entered in chronological order upon a separate register.

The records relating to the distribution of Museum publications are quite voluminous. The mailing lists are classified as follows: (1) the list of domestic and foreign libraries which receive the Museum Reports, Proceedings, and Bulletins (embracing about 2,300 names); (2) the list of foreign correspondents receiving the Museum Report (embracing about 2,000 names), and (3) the lists of individuals and institutions receiving publications upon one or more special subjects (embracing in all about 3,000 names). Card catalogues corresponding to these lists are preserved. Upon the catalogues corresponding to the first two is recorded, in convenient form, information regarding the relations of the Museum with the libraries and institutions listed. The lists referred to under the third heading consist of the names of the recipients of the Reports, Proceedings volumes, and Bulletins, and of separate papers from the Proceedings and Reports; also of the names of specialists receiving papers upon one or more of a variety of subjects. Each list has its corresponding card catalogue. A separate record is kept showing to which lists each publication of the Museum has been distributed. In the case of publications sent in compliance with individual requests, the orders are copied in press-copy books kept for that purpose.

Typewritten lists of the papers published in the Proceedings, arranged (1) by serial number, (2) alphabetically under the name of the author, and (3) according to subject-matter, have been prepared, and are of great importance in responding to the requests of applicants for papers on various subjects. A separate list has also been prepared referring under (1) name of author, (2) subject, and (3) locality to all zoological, paleontological, botanical, geological, and anthropological papers published by the Smithsonian Institution and its various branches. This is found very useful in connection with the Museum correspondence.

All letters relating to Museum matters, with the exception of those bearing upon the finances and personnel of the Museum, are filed in this office. A series of special files, arranged separately, is also kept (1) for letters received from the various departments and bureaus of

the Government, (2) for letters received from officials of the Museum, (3) for reports of the scientific and administrative officers of the Museum, (4) for cross-references to letters from institutions and establishments, (5) for letters relating to explorations in the results of which the Museum expects to participate.

By means of card catalogues are also recorded references to all letters containing unaccepted offers to present, deposit, exchange, or sell specimens to the Museum. This record has been found very useful in supplying information to curators who may at any future time be desirous of obtaining material which for some reason could not be accepted at the time it was offered.

Distribution of publications.—The transmissions of publications to applicants making special request by letter have surpassed in number those of any preceding year, and it is safe to say that the regular and special sendings have aggregated upward of 35,000 publications, including volumes and separate papers.

Much attention has been given to the revision of the mailing lists. Record of the date of publication of each volume and pamphlet issued has been maintained, and is of frequent service for reference, as is also the catalogue record of lists of specialists to whom publications have been mailed.

By direction of the Secretary of the Institution, a copy of each publication, as soon as issued, is mailed to publishing houses representing the Institution as agents in London, Paris, Berlin, Leipsic, and Milan.

The innovations mentioned in the report for the preceding fiscal year, especially regarding the distribution of publications direct from this office, have proved satisfactory. The regular distributions to the persons on the permanent lists are still made from the document room. The special sendings forwarded from this office are recorded on slips printed for the purpose, with the name of the person or institution supplied, the address, the serial number of the publication, and the date of mailing. When the sending comprises both Smithsonian and Museum publications, the package is transmitted from the Smithsonian building, and a slip is filled out similarly to the above, with the addition of the name of the person upon whose recommendation the sending is made. These slips are press-copied in books reserved exclusively for this purpose, and constitute a permanent record.

More than 4,000 labels have been written in connection with the distribution of the Smithsonian allotment of the Museum Reports for 1891 and 1892 to institutions in the United States and abroad.

The Museum Report for 1892, Bulletin 48, and Circulars 43, 44, 45, and 46 were issued during the year. Proceedings papers Nos. 981–1031 were distributed in pamphlet form, and also advance sheets of Nos. 1040 and 1041.

REGISTRATION AND DISTRIBUTION.

The data concerning these branches of the administrative work are taken from the report of the registrar, Mr. S. C. Brown.

There were received during the year 30,311 packages of all kinds, including material for addition to the collections, publications, and supplies. These figures, as compared with those for the preceding year, show a decrease of about 19,000. This decrease is readily accounted for, however, when it is remembered that during the fiscal year 1893–94 the material returned from the World's Columbian Exposition was received and entered. There were 2,791 packages sent out, of which 694 contained specimens transmitted to educational establishments as gifts, or sent to individuals or institutions in exchange, or for study. A few specimens returned to owners are also included in this number. The entries made on the incoming transportation record numbered 2,664, and on the outgoing transportation record, 719.

The number of accessions or lots of material received was 1,223, an increase of 62 over the record for the preceding year. There were 467 "temporary" accessions, consisting of material received for identification. An increase of over 12,000 is noted in the number of specimens distributed, the total for the year having been 39,236.

The storage record shows that 354 packages were placed in storage, while 113 packages were withdrawn by the curators to whose departments the material belonged. The storage rooms having become very much crowded, it was found necessary to make arrangements for additional space, and in June, 1895, new quarters were secured, containing more than double the floor space and three times the cubic capacity of the quarters previously occupied.

Of the collections transmitted to educational establishments during the year, a large proportion consisted of marine invertebrates, although many specimens of rocks and ores, and casts of prehistoric implements have been sent out, as well as a limited number of minerals and fishes. Lists of the specimens contained in the collections which have been prepared for distribution since 1890 are printed in Appendix IX.

A detailed statement, arranged geographically, showing to what individuals and institutions specimens have been sent during the year, either in exchange, as gifts, or for study, is given in Appendix X. The number of lots of specimens sent out is here recorded:

United States:		United States:	
Alabama	2	Iowa	17
Arkansas	1	Kansas	3
California	11	Kentucky	4
Colorado	2	Maryland	5
Connecticut	4	Massachusetts	18
District of Columbia	14	Michigan	3
Georgia	3	Minnesota	1
Illinois	9	Mississippi	1
Indiana	3	Missouri	3

United States:		Foreign countries:	
Montana	1	Australia	4
Nebraska	5	Austria	5
New Jersey	4	Canada	4
New York	24	Denmark	4
North Dakota	3	England	13
Ohio	9	France	9
Oregon	1	Germany	7
Pennsylvania	26	Holland	1
Rhode Island	1	India	7
South Carolina	2	Japan	4
South Dakota	1	Mexico	1
Tennessee	2	Russia	1
Virginia	2	Syria	1
Washington	1	Total	253
Wisconsin	6		

The following table shows the number of specimens distributed by the various departments during the year covered by this report, either as gifts or in exchange:

Ethnology	75	Insects	4,846
Prehistoric anthropology (original objects)	1,269	Marine invertebrates	20,405
Prehistoric anthropology (casts)	1,178	Recent plants	1,382
Mammals	423	Minerals	1,016
Birds	1,437	Rocks and ores	2,567
Reptiles and batrachians	75	Helminthological specimens	242
Fishes	853	Comparative anatomy	65
Fossils	2,214	Musical instruments	15
Mollusks	1,174	Total	39,236

The thanks of the National Museum are due to Messrs. George Christall & Co., agents of the Trinidad Line of Steamers, for courtesies extended in offering to transport collecting outfits and specimens to and from Trinidad free of charge.

BUILDINGS AND LABOR; POLICE AND PUBLIC COMFORT.

The superintendent of buildings, Mr. Henry Horan, mentions in his annual report the more important features of the work accomplished during the year by the force under his charge. An abstract of this portion of his report is given in Appendix XI. Mr. Horan has also submitted a statement showing the number of cases, fixtures, etc., made, altered, or repaired, the amount of fuel, gas, and ice consumed, a list of articles lost and found in the Museum halls, lists of the tools in use in the various shops, and a table showing the number of feet of telephone and other electric wire installed.

WORK OF THE MUSEUM PREPARATORS.

TAXIDERMISTS.

Mr. William Palmer, chief taxidermist, reports that the following mammals were mounted during the year, but owing to pressure of other work were not entirely finished: A Texas hare, a marsh hare, an Angora

goat, a Japanese goat, two guinea pigs, and a few other small mammals. A limited number of mounted specimens, including the head of a water buffalo, a pangolin, a flying squirrel, and a mole rat, were repaired and put on new stands.

All mammals dying from the effects of confinement at the National Zoological Park are now received by the taxidermist and by him turned over to the osteological preparator or to the department of birds, reptiles, or mammals, as the case may be. The total number of mammals received in the flesh during the year was 84, nearly one-half having come from the Zoological Park, as will be seen from the following table:

Mammals received in the flesh.

	From the National Zoological Park.	From other sources.
Primates	7	.....
Carnivora	10	5
Ungulata	9	.....
Chiroptera	.....	10
Rodentia	8	30
Insectivora	.....	3
Marsupialia	1	1
Total	35	49

A number of skins were received, most of them dry, but some fresh or salted; also a few mounted specimens to be dismounted.

Number of skins received.

Carnivora	8
Ungulata	12
Rodentia	11
Marsupialia	2
Total	33

Forty-six skins, mostly of large mammals, were received and prepared for the Department of Agriculture. Two hundred and fifteen dry skins were prepared for the study series of the Museum, as shown in the following table:

Primates	18	Chiroptera	11
Carnivora	72	Edentata	1
Ungulata	33	Marsupialia	10
Rodentia	67	Total	215
Insectivora	3		

The number of skins remaining on hand June 30, 1895, was 369, as shown below:

Primates	29	Insectivora	1
Carnivora	203	Sirenia	1
Rodentia	35	Marsupialia	16
Ungulata	78	Total	369
Chiroptera	3		
Edentata	3		

Mr. William Palmer spent a portion of the months of February and March in making collections in the Kissimmee River region of Florida.

A model of the Tower of Babel was prepared by Mr. Joseph Palmer for exhibition at the Atlanta Exposition in connection with the exhibit of the department of oriental antiquities under the direction of Dr. Cyrus Adler. He was also occupied in assisting in the preparation of lay figures and of exhibits of reptiles and birds.

Casts were made of a collection of 318 Assyrian seals, transmitted by Dr. Frederick Stearns, of Detroit, Mich. A large number of casts of cetaceans were cleaned and repaired, and the contents of the rooms in the basement of the Smithsonian building in which the molds are stored, were thoroughly overhauled. All of the tanks and pickled skins were removed from the shed near the Fish Commission building to one of the sheds south of the Smithsonian building. The location of the quarters rented for storage purposes and for workrooms was changed near the close of the year.

Mr. J. M. Stowell, of the Leland Stanford Junior University, and Mr. McElroy, of Washington, spent several weeks in the shops of the taxidermists, studying the methods of work.

Mr. Henry Marshall, taxidermist of the department of birds, cleaned and renovated about 4,000 specimens in the exhibition series during the year. He also skinned 225 alcoholic birds and dismounted about 150 specimens. Forty-two fresh specimens were skinned and about 50 specimens were mounted for the exhibition series.

OSTEOLOGIST.

The osteological work has consisted mainly in the preparation of material for the study series. Although a number of specimens have been prepared for exhibition, it has been impossible, owing to pressure of other work, to mount more than a small portion of them. The work of preparing a restoration of a skeleton of Zeuglodon for the Cotton States and International Exposition at Atlanta interfered greatly with the regular work of the osteologist. Three months of the time of Mr. J. W. Scollick were spent in developing portions of the skeleton on which the restoration was based.

Eight hundred and eighty-one skulls were cleaned for the department of mammals, and a considerable amount of time was spent in preparing specimens for the use of Professor Cope in connection with the preparation of a work on the reptilia of North America.

The number of specimens received, cleaned, and mounted for the department of comparative anatomy is shown in the following table:

	Mammals.	Birds.	Reptiles.	Fishes.	Total.
Received as fresh specimens:					
Entire skeletons	10	38	6	.....	54
Cleaned:					
Entire skeletons	8	36	12	2	58
Incomplete skeletons	.....	*274	.....	.....	274
Skulls	3	13	3	5	24
Mounted:					
Entire skeletons	1	2	5	1	9
Skulls	3	.....	1	.....	4
Total	25	363	27	8	423

*Sterna.

PHOTOGRAPHER.

Mr. T. W. Smillie, photographer, reports that 759 negatives were made during the year, also 227 platinum prints, 1,231 silver prints, 25 cyanotype prints, 10 bromide enlargements, and 6 lantern slides. Twenty-nine prints were mounted. A large portion of this work was done for the departments of ethnology, prehistoric anthropology, botany, mammals, geology, and marine invertebrates. The care of the photographic collection and other work of a miscellaneous character, including the testing of a number of different kinds of ink, in order to determine the most suitable for the use of the Museum, occupied considerable time.

COLORIST.

Mr. A. Zeno Shindler continued the work of cleaning and restoring some of the pictures contained in the Catlin collection of Indian paintings. About one hundred of these have received attention up to the present time. He also continued his work on the series of paintings representing the races of man. Some miscellaneous work was accomplished, including the painting of lay figures for the department of ethnology, and the retouching of a series of photographs of Pembroke College, England.

APPENDIX I.

The Scientific and Administrative Staff.

(Corrected to August 1, 1896.)

KEEPER, EX OFFICIO,

S. P. Langley, Secretary of the Smithsonian Institution.

EXECUTIVE OFFICERS.

G. Brown Goode, Assistant Secretary of the Smithsonian Institution, in charge of the U. S. National Museum.
Frederick W. True, Executive Curator.
W. V. Cox, Chief Clerk.

SCIENTIFIC STAFF.

ARTS AND INDUSTRIES: G. Brown Goode, Curator.
Historical Collections: A. Howard Clark,[1] Custodian.
Religious Ceremonial Objects: Cyrus Adler,[1] Custodian.
Technological Collections: J. E. Watkins, Curator.
Graphic Arts: S. R. Koehler, Curator.
Materia Medica: J. M. Flint,[1] United States Navy, Curator.
Forestry: B. E. Fernow,[1] Curator.
Electrical Collections: George C. Maynard,[1] Custodian.
Physical Apparatus: W. C. Winlock,[1] Curator.
ETHNOLOGY: O. T. Mason, Curator; Walter Hough, Assistant Curator.
Aboriginal Pottery: William H. Holmes,[1] Curator.
Pueblo Collections: F. H. Cushing,[1] Custodian.
ORIENTAL ANTIQUITIES: Paul Haupt,[1] Curator; Cyrus Adler,[1] Assistant Curator.
PREHISTORIC ANTHROPOLOGY: Thomas Wilson, Curator.
MAMMALS: Frederick W. True, Curator.
BIRDS: Robert Ridgway, Curator; C. W. Richmond, Assistant Curator.
BIRDS EGGS: Charles Bendire,[1] Major, U. S. A. (retired), Curator.
REPTILES AND BATRACHIANS: Leonhard Stejneger, Curator.
FISHES: Tarleton H. Bean,[1] Curator; Barton A. Bean, Assistant Curator.
MOLLUSKS: William H. Dall,[1] Curator; C. T. Simpson, Aid; W. B. Marshall, Aid.
INSECTS: L. O. Howard,[1] Curator; W. H. Ashmead,[1] Custodian of the Collection of Hymenoptera; D. W. Coquillett,[1] Custodian of the Collection of Diptera; O. F. Cook,[1] Custodian of the Collection of Myriapoda; E. A. Schwarz,[1] Custodian of the Collection of Coleopterous Larvæ; M. L. Linell, Aid.
MARINE INVERTEBRATES: Richard Rathbun,[1] Curator; J. E. Benedict and Miss M. J. Rathbun, Assistant Curators.
Helminthological Collections: C. W. Stiles,[1] Custodian.
COMPARATIVE ANATOMY: Frederic A. Lucas, Curator; Frank Baker,[1] Associate Curator.

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[1] Honorary, and serving without salary.

PLANTS (NATIONAL HERBARIUM): F. V. Coville,[1] Curator; J. N. Rose, Assistant Curator; C. L. Pollard, Assistant Curator; O. F. Cook, Assistant Curator; Miss Carrie Harrison, Aid.

PALEONTOLOGY: C. D. Walcott,[1] Curator: Charles Schuchert, Assistant Curator.

Vertebrate Fossils: O. C. Marsh,[1] Curator; F. A. Lucas, Assistant Curator.

Invertebrate Fossils:

Paleozoic: Charles Schuchert, Custodian.

Mesozoic: T. W. Stanton,[1] Custodian.

Cenozoic: W. H. Dall,[1] Associate Curator.

Fossil Plants: Lester F. Ward,[1] Associate Curator; F. H. Knowlton,[1] Custodian of Mesozoic Plants; David White,[1] Custodian of Paleozoic Plants.

MINERALS: F. W. Clarke,[1] Curator; Wirt Tassin, Assistant Curator.

GEOLOGY: George P. Merrill, Curator; W. H. Newhall, Aid.

LIBRARY: Cyrus Adler,[1] Librarian; Newton P. Scudder, Assistant Librarian.

ASSOCIATES.

Theodore Gill,[1] Associate in Zoology.

R. E. C. Stearns,[1] Associate in Zoology.

R. W. Shufeldt,[1] Associate in Comparative Anatomy.

C. A. White,[1] Associate in Paleontology.

C. Hart Merriam,[1] Associate in Zoology.

ADMINISTRATIVE STAFF.

CHIEF CLERK: W. V. Cox.

CHIEFS OF DIVISION:

Correspondence and Reports: R. I. Geare.

Registration and Storage: S. C. Brown.

Editor of Proceedings and Bulletins: Marcus Benjamin

Disbursing Clerk: W. W. Karr.

Property Clerk: J. S. Goldsmith.

Photographer: T. W. Smillie.

Superintendent of Buildings: Henry Horan.

PREPARATORS.

Joseph Palmer, Chief Modeler.

William Palmer, Chief Taxidermist.

A. Z. Shindler, Colorist.

J. W. Scollick, Osteologist.

Henry Marshall, Taxidermist.

N. R. Wood, Taxidermist.

A. H. Forney, Taxidermist.

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[1] Honorary, and serving without salary.

APPENDIX II.

List of Accessions During the Year Ending June 30, 1895.

[All accessions marked with an "A" indicate material obtained for the Atlanta Exposition.]

Abbe, Prof. Cleveland. (See under William D. Fry.)

Abbott, Dr. William L. (Philadelphia, Pa.): A large and valuable collection of natural history specimens and other objects obtained in Turkestan, Kashmir, and adjacent sections of Asia, consisting of 97 mammal skins, 102 skulls, and 11 alcoholic specimens, skin of a Cyprinoid fish, 288 birds' skins representing 120 species, birds' eggs, insects, reptiles, 2 musical instruments, ethnological objects, and a human skull obtained from a Mussulman cemetery. 29359.

Abel, J. C. (Lancaster, Pa.): Eleven rude implements, 11 arrow and spear heads, and a polished hatchet (28881); 3 unfinished stone hatchets, stone chisel, 13 pebbles of quartzite and graywacke slightly worked on the edges, 20 quartz crystals from the Conestoga Hills, also photographs of a double-grooved ax and a rude stone implement (28976); 41 arrow and spear heads and 10 fragments of pottery from the same locality (29015).

Abraham, F., & Son (Boston, Mass.): Meerschaum from Eski Shehr, Asia Minor. Purchase. 28641.

Academy of Natural Sciences (Philadelphia, Pa.), through Witmer Stone: Eight birds' skins, representing 8 species, from Mexico. Deposit. 28941. (Returned.)

Adam, Louis (Paris, France): Seventy-seven photographs of his collection of prehistoric implements and objects from Central America. 28517.

Adams, W. W. (Union Springs, N. Y.): A thin and finely chipped leaf-shaped implement of flint. 28315.

Agricultural and Mechanical College (Agricultural College, Miss.), through Prof. S. C. Creëlman. Thirty vertebræ of Zeuglodon. Exchange. 29305.

Agriculture, Department of, Hon. J. Sterling Morton, Secretary.

Collection of birds' eggs, consisting of 92 specimens, representing 27 species, from the United States and Mexico, also 14 birds' nests, including several species new to the Museum collection (28317); collection of fishes obtained by Messrs. Nelson and Goldman in Vera Cruz, Mexico, consisting of *Pimelodus petenensis*, *Symbranchus marmoratus*, *Agonostoma monticola*, *Pœcilia mexicana*, *Gobiomorus dormitator*, *Chonophorus mexicanus*, *Sicyopterus* sp., *Heros* sp., *Heros maculipinnis*, and *Pseudoxiphophorus bimaculatus* (28452); types and other specimens of fishes collected by the Death Valley Expedition (28932[1]); through Dr. C. Hart Merriam, 3 specimens of *Gila robusta* and 3 specimens of *Agosia chrysogaster* collected by Dr. A. K. Fisher near Huachuca, Ariz., and in the Chiricahua Mountains (28933); through Dr. D. E. Salmon, types and cotypes of parasites, consisting of type specimens of *Moniezia alba* (Perroncito, 1879) R. Bl., 1891; *Moniezia trigonophora*, Stiles & Hassall, 1893; *Moniezia oblongiceps*, Stiles & Hassall, 1893;

[1] Worked up by Prof. C. H. Gilbert.

AGRICULTURE, DEPARTMENT OF—cont'd.

and *Moniezia planissima*, Stiles & Hassall, 1893; cotype of *Monostomum trigonocephalum*, Rud., 1809; types of *Balbiania Rileyi*, Stiles, 1893; *Balbiania falcatula*, Stiles, 1893; *Sarcocystis falcatula*, Stiles, 1893; *Strongylus rubidus*, Hassall & Stiles, 1892; also cotype of *Distomum truncatum* (Rudolphi, 1819) (29021); 2 Isopods (*Porcellio*) collected by G. B. King at Lawrence, Mass. (29069); 6 specimens of Umbelliferæ collected by Joseph Howell in Oregon (28974).

Material deposited in the National Herbarium: Type specimen of *Eriogynia uniflora*, collected by F. D. Kelsey in Montana (29003); 120 plants, from Oregon, collected by Thomas Howell (29004); 65 plants collected by Rev. A. C. Waghorne in Newfoundland (29013); 176 plants collected by B. F. Bush in the Indian Territory (29027); 191 plants collected by A. H. Curtiss in Florida (29028); 2 specimens of Colorado plants collected by T. C. Porter, Easton, Pa. (29045); 23 lichens from Labrador, collected by Rev. A. C. Waghorne, Newfoundland (29046); 59 plants collected by Frank S. Collins, Malden, Mass. (29055); 102 specimens collected in Minnesota by Joseph E. Tilden (29056); 2 specimens collected in Oregon and California by Thomas Howell, Arthur, Oreg. (29068); 37 specimens from Newfoundland, collected by Rev. A. C. Waghorne (29088); 2 plants from G. C. Nealley, San Diego, Tex. (29089); 11 specimens collected by E. W. Nelson in Mexico (29090); 18 plants from Central America, collected by John Donnell Smith, Baltimore, Md. (28904); 104 plants collected in southern California by S. B. Parish, San Bernardino (28973); plants from Oaxaca, Mexico, collected by E. W. Nelson (28986); 5 plants from Central America, sent by John Donnell Smith, Baltimore, Md. (28987); 101 herbarium specimens, collected by B. L. Robinson in the State of Washington (29115); part of a type specimen of *Tetradymia canescens* from the De Candolle Herbarium, Geneva (29126); specimen of *Collinsia repens*, collected in Texas by John M. Coulter, Lake Forest, Ill. (29127); 3 specimens of *Commelina* and *Tradescantia* from the herbarium of Mrs. Alice Stevens, Washington, D. C. (29128); seeds and scales of white-barked birch, collected by J. B. Leiberg on the shore of Lake Pend d'Oreille, Kootenai County, Idaho (29135); water-lily from C. S. Sargent, collected in Mazatlan, Mexico (29140); 2 specimens of *Potentilla*, collected in Idaho by J. B. Leiberg (29139); 34 herbarium specimens, collected in Maryland by C. E. Waters (29138); orchid cultivated in a greenhouse, sent by A. B. Eaton (29146); specimen of *Crocidium multicaule* from Washington, sent by F. D. Kelsey (29153); 39 herbarium specimens from C. B. Shattuck, collected in Texas (29154); roots of *Tradescantia virginiana* from John W. Short, Liberty, Ind. (29170); 131 herbarium specimens from Cornell University, Ithaca, N. Y. (29171); 32 specimens of California oaks from the California Academy of Sciences, San Francisco (29172); 800 herbarium specimens from the Herbarium of the Berlin Botanical Gardens, Berlin, Germany (29173); second fascicle of *Phycotheca Boreali-Americana*, sent by Frank S. Collins, Malden, Mass. (29198); 182 herbarium specimens, sent by James Macoun, Ottawa, Canada (29218); herbarium specimen sent by Mr. F. V. Coville (29222); 227 herbarium specimens sent by the University of Idaho (29223); herbarium specimen from Cornell University, Ithaca, N. Y. (29224); 151 herbarium specimens from F. Buchenau, Bremen, Germany (29225); 4 herbarium specimens sent by W. S. Brunner, Ramsey Canyon, Ariz. (29226); seeds of *Cedrela fissilis* from the herbarium of Columbia College, New York, collected by Thomas Morong (29230); herbarium specimen of *Viola*, sent by F. A. Waugh, Stillwater, Okla. (29231); herbarium specimen from A. Fredholm, District of Columbia

AGRICULTURE, DEPARTMENT OF—cont'd. (29238); 10 herbarium specimens sent by S. M. Tracy, Starkville, Miss. (29239); 99 herbarium specimens from E. O. Wooten, (29240); 19 herbarium specimens, sent by Dr. N. L. Britton, Columbia College, New York, collected in the eastern part of the United States (29252); 165 herbarium specimens from the University of Idaho, Moscow, Idaho (29253); herbarium specimen sent by Wellesley College, Wellesley, Mass. (29262); 105 herbarium specimens of Labrador plants, sent by Rev. A. C. Waghorne, Newfoundland (29282); herbarium specimens of Colorado plants, sent by R. W. Alderson, Witch Creek, Cal. (29283); 5 plants from Texas, sent by H. Wurzlow, Industry, Tex. (29286); 2 ferns collected in Baltimore County, Md., by C. E. Waters (29287); specimen of *Linaria canadensis* sent by Miss Marie B. Robertson, Blackshear, Ga. (29300); about 500 Mexican plants collected by E. W. Nelson (29309); 6 herbarium specimens sent by Miss Lyra Mills, Eldorado Canyon, Lincoln County, Nebr. (29348); 85 herbarium specimens from E. L. Greene, Berkeley, Cal. (29349); 99 herbarium specimens sent by E. O. Wooten (29350); herbarium specimen from S. S. Boyce, Rolling Fork, Miss. (29351); specimen of *Cyperus spectabilis*, sent by Dr. Timothy E. Wilcox, U. S. Army, Fort Huachuca, Ariz. (29352); 26 herbarium specimens from S. M. Tracy, Starkville, Miss. (29366); 39 herbarium specimens from W. M. Canby, collected in Florida (29388); type specimen of a plant sent by A. Davidson, (29389); 557 herbarium specimens from A. H. Curtiss, Jacksonville, Fla. (29394); 131 herbarium specimens from W. W. Eggleston, Rutland, Vt. (29401); 2 plants from L. H. Plumb, Springfield, Mass. (29410); 2 herbarium specimens from Mrs. Helen B. Webster, Washington, D. C. (29422); 16 herbarium specimens from John K. Ely, Chewelah, Wash. (29429); specimen of *Elæagnus longipes* from George F. Payne, Atlanta, Ga. (29452); 2 herbarium specimens of *Lathyrus ornatus*, Nutt. (29469); 18 herbarium specimens from H. Wurzlow, Industry, Tex. (29470); 5 herbarium specimens from Andrew Bradford, Fayetteville, N. C. (29471); herbarium specimen of *Psathyrotes pilifera*, Gray, from J. W. Carpenter, St. George, Utah (29498); 2 herbarium specimens from J. M. Holzinger, Minneapolis, Minn. (29499); herbarium specimens of *Tradescantia virginiana villosa*, Watson, from F. Reppert, Muscatine, Iowa (29500); 6 herbarium specimens from J. M. Holzinger (29518).

ALCOCK, SURG. CAPT. A. (See under Indian Museum.)

ALDERSON, R. W. (See under Agriculture, Department of.)

ALEXANDER, Prof. W. D. (Honolulu, Hawaiian Islands): Six photographs of scenery in Necker Island, Sandwich group. 28689.

ALLEN, Dr. J. A. (See under American Museum of Natural History.)

ALLEN, J. W. (Warrenton, N. C.): Asbestos. 29259.

AMATEIS, L. (Washington, D. C.): Thirty-six casts of Assyrian seals. Purchase. 28434.

AMERICAN MUSEUM OF NATURAL HISTORY (New York City), through Dr. J. A. Allen: Fifty-seven birds' skins, representing 22 species from Mexico and Guatemala (28892); type specimen of *Pitylus humeralis* from Bogota (28927). Deposit. (Returned.)

AMSTUTZ, N. S. (Cleveland, Ohio): Collection of specimens showing the first results and the present condition of the Amstutz process of transmitting photographs by telegraph, etc. (28757); an original engraving executed upon an artograph (28928); specimens illustrating results from the Amstutz experiments in telegraphic engraving from photographic prints and sketches (28990).

ANTHONY, A. W. (San Diego, Cal.): Reptiles from Lower California (exchange) (28386); 5 specimens of Pennatulæ (gift) (28614); lizards from San Clemente

ANTHONY, A. W.—continued.
Island, Cal. (exchange) (28713); 2 specimens of Fulmars, types of *Fulmarus g. columba* (deposit) (29418); through Major Charles Bendire, U. S. A., set of Californian land shells, *Helix Kelletti*, Forbes (gift) (29466); 6 specimens of sea birds (gift) (29484).

ANTHROPOLOGY, SCHOOL OF (Paris, France): Nine modern porcelain spindle whorls. 28428.

ANTIOCH COLLEGE CHAPTER, AGASSIZ ASSOCIATION (Yellow Springs, Ohio): Two species of Unionidæ. 29160.

APPLETON, J. W. M. (Salt Sulphur Springs, W. Va.): Specimen of *Pyrrharctia Isabella*. 29485.

ARGETSINGER, GEORGE H. (Hardeeville, Fla.): Cow-fish, *Ostracion quadricorne*. 28955.

ARLINGTON MILLS (Boston, Mass.), through Franklin W. Hobbs, assistant treasurer: Picture entitled "Columbus Sighting America," woven in silk by the Arlington Mills, in commemoration of the four hundredth anniversary of the discovery of America by Columbus, and as a souvenir of the World's Columbian Exposition. 29344.

ARMS, Mrs. J. R. (Richford, Vt.): Flax hackle, 150 years old. 29398.

ARMSTRONG, FRANK B. (Alta Mira, Tamaulipas, Mexico): Eighteen birds' skins, representing 10 species (29026); 12 birds' skins, representing 9 species (29103); 23 birds' skins, representing 7 species (29125). Purchase.

ARNOLD, E. (Battle Creek, Mich.): Four eggs (1 set) of Holboell's Grebe, 5 eggs (1 set) of Prairie Sharp-tailed Grouse, 5 eggs (1 set) of Western Savanna Sparrow with nest, and 4 eggs (1 set) of Leconte's Sparrow, with nest, from Manitoba, Canada. 29263.

ATKINSON, E. C. (Philadelphia, Pa.): Asbestos, gummite, and allanite. Purchase. 29301.

ATTWATER, H. P. (San Antonio, Tex.): Six eggs (1 set) of Bullock's Oriole, 8 eggs (2 sets) of Orchard Oriole, 4 eggs (1 set) of Western Lark Sparrow, 4 eggs (1 set) and 3 eggs (1 set) of Scissor-tailed Flycatcher (28455); 2 eggs (1 set) of Mourning Dove, *Zenaidura macroura*,

ATTWATER, H. P.—continued.
from San Antonio (29091); 6 specimens of Blue-eared Jay, *Aphelocoma cyanotis*, from Texas (29455).

AYLETT, P. H. (Ayletts, Va.), through William Palmer: Specimen of Bachmann's Warbler, *Helminthophila Bachmani*, from Virginia. 28569.

BABBITT, J. C. (Dighton, Mass.): Photograph of Dighton Rock and one of a large bowlder near Dighton. 29167.

BACH, E. (Aberdeen, S. Dak.): Specimens of Box-elder bug, *Leptocoris trivittatus*, Say. 28855.

BAKER, Dr. Fred. (San Diego, Cal.): Nine shells (29208); 3 specimens of *Lithophagus plumula*, from False Bay, Cal. (29319).

BANGS, O. (Boston, Mass.): Six species of crabs and shrimps from Micco, Fla. 29119.

BARBOUR, E. H. (University of Nebraska, Lincoln, Nebr.): Volcanic dust composed of finely comminuted pumice from Chase County. 29318.

BARCLAY, A. O. (Reagan, Tex.): Wolfram. 29377.

BARLOW, C. (Santa Clara, Cal.): Two eggs (1 set) with nest of Annas Hummingbird, *Calypte Anna* (28666); nest and 2 eggs of Annas Hummingbird, *Calypte Anna*, from San Jose, Cal. (29117).

BARTLEMAN, R. S. (U. S. legation, Caracas, Venezuela): Six photographs of natives and scenery (29132); pair of native Venezuelan shoes or "Alpargatas" (29403).

BATES, A. C. (New York City): Five specimens of tourmaline from near Rock Landing, Middlesex County, Conn. Purchase. 29504 "A."

BAUR, Dr. GEORGE (University of Chicago, Chicago, Ill.): Three alcoholic specimens of *Certhidia Salvini*. 28878.

BEAL, K. F. (Washington, D. C.): Specimens of Isopoda. 29190.

BEALE, Mrs. WILLIAM REDFORD. (See under Mrs. James Redd.)

BECK, R. H. (Berryessa, Cal.): Five eggs (1 set) with nest of Dotted Cañon Wren, *Catherpes mexicanus punctulatus*, from Santa Clara County (new to the Museum collection) (gift) (28360); 18 specimens of Bryant's Sparrow, *Ammodramus sandwichensis Bryanti*, and 1 specimen of

BECK, R. H.—continued.
Black-chinned Sparrow, *Spizella atrigularis* (gift) (28375); nest and 4 eggs of Rufous-crowned Sparrow, *Peucæa ruficeps* (new to the Museum collection) (purchase) (28411); through Major Bendire, 7 birds' skins, representing 4 species (gift) (28616).

BECKWITH, Prof. M. L. (Newark, Del.): Collection of insects, representing 47 species. 28707.

BEECHER, Dr. CHARLES E. (Yale College, New Haven, Conn.): Ten models, illustrating the embryonic stages of *Cistella*. 29368.

BEIRNE, Mrs. B. T. (Lewisburg, W. Va.): Sun-dial supposed to have been the property of Thomas Jefferson. Deposit. 29009.

BELL, JAMES (Gainesville, Fla.), through Robert Ridgway: Bullfrog. 28679.

BELL, J. J. (Brooksville, Fla.), through Dr. Stringer: Twenty-four spear-heads found *en cache* in Brooksville. (Presented by Mr. Bell to the Smithsonian Institution and deposited in the National Museum.) 28879.

BELL, Lieut. Col. JAMES M., U. S. Army (Fort Sam Houston, Tex.): Collection of mounted heads and antlers of moose, elk, and deer; also ethnologcal objects. Deposit. 28804.

BELL, Dr. ROBERT (Geological Survey of Canada, Ottawa, Canada): Retinite from Cedar Lake, Canada. 28744.

BEMENT, J. M. (Newry, Pa.): Oriskany sandstone brachiopods, 1 specimen of *Spirifer arrectus*, and 4 specimens of *Atrypa reticularis*. 28420.

BENEDICT, Hon. C. H. (U. S. Consul, Cape Town, Africa): Specimen of peridotite rock, garnets, pyrite, and associated minerals of the diamond reef, and a report on, and photographs of, the Jagersfontaine mine; and a glass model of the "Excelsior." 28937. (See under H. C. Moore.)

BENEDICT, J. E. (U. S. National Museum): Two White-footed Mice, *Sitomys leucopus*. 29007. (See under W. C. Kendall; Miss Nannie E. Rousseau.)

BENEDICT, J. E., jr. (Woodside, Md.): Box Tortoise. 29391.

BENDIRE, Maj. CHARLES, U. S. Army. (See under A. W. Anthony, R. H. Beck, B. J. Bretherton, D. B. Burrows, J. L. Davison, W. B. Judson, R. H. Lawrence, L. P. Scheerer, and R. S. Williams.)

BENJAMIN, W. E. (New York City): Atlas, containing engravings illustrating biblical antiquities. Purchase. 29448. "A."

BENNIGER, G. F. (Fort Collins, Colo.): Wood Rat, *Neotoma fuscipes*. 28608.

BERELSFORD, W. H. (U. S. National Museum): Red Bat, *Atalapha borealis*. 28407.

BERLIN BOTANICAL GARDENS (Berlin, Germany). (See under Agriculture, Department of.)

BERRY, E. W. (Passaic, N. J.): Watermites, Hydrachnidæ, and specimens of fresh-water Entomostraca. 28378.

BIEDERMAN, C. R. (Bonito, N. Mex.): Alunite (28460); stone knife found about 12 miles south of Gila River in Pinal County, Ariz. (29169).

BIGOT, Dr. A. (See under Caen, University of.)

BIRD, S. M. (Galveston, Tex.): Twenty-four Mexican and other copper coins of the seventeenth, eighteenth, and nineteenth centuries. Deposit. 28805.

BISHOP, Mr. (Washington, D. C.): Lop-eared rabbit, in the flesh. 28592.

BISHOP, GILES (New London, Conn.): Photograph of a family of Cumberland Gulf Eskimo. 29450.

BLAIR, R. A. (Sedalia, Mo.), through Hon. C. D. Walcott, Director, U. S. Geological Survey: Thirty-nine fossils consisting of *Hyolithes lanceolatus, Lingula gorbyi, Lingula sedaliensis, Blairocrinus arrosus*, Blair, cfr. *trijugis, Dictyonema, Orbiculoidea*, and undetermined crinoids (28382); 9 specimens of *Dictyonema*, specimen of *Septopora*, specimen of *Fenestella* (?), and 8 undetermined specimens, all from the Choteau formation (28520); 2 specimens of *Conularia Sampsoni* (28602).

BOAS, Dr. FRANZ (care of Bureau of Ethnology, Washington, D. C.): Collection of objects representing the winter religious ceremonials of the Fort Rupert Indians of British Columbia, and a box of photographic negatives (29057); a

BOAS, Dr. FRANZ—continued.
set of charts of Baffin Land, drawn by the Eskimo for the use of Dr. Boas in his explorations (29060).

BOEHMER, G. H. (Gaithersburg, Md.): Sphinx Moth from Maryland. 29476.

BOETTGER, Dr. O. (See under Museum Senckenbergianum.)

BOGAN, S. W. (Washington, D. C.): Small collection of butterflies from Sparrows Point, Md. 28467.

BOMBERGER, Rev. J. H. (Columbiana, Ohio): Twenty-five beetles. 28471.

BONELLI, DANIEL (Rioville, Nev.): Specimens of lead, vanadate, and garnet in mica schist and tourmaline in quartz. 29372.

BOOTH, JOHN (Coalville, Utah): Minerals. (29111, 29235.)

BOUCARD, A. (Isle of Wight, England): Seven hundred and forty-nine birds' skins, representing 406 species from all parts of the world (28963); 917 specimens, representing 347 species of Finches, Tanagers, and Weaver birds from various localities (29313).

BOUDINOT, Mrs. E. C. (Washington, D. C.): Daguerreotype of Enos Ridge, Cherokee, and a photograph of Col. E. C. Boudinot, Cherokee. 28690.

BOURNE, H. H. (North Enid, Okla.): Glacialite. 29356.

BOWMAN, D. A. (Bakersville, N. C.): Minerals. 28906.

BOWRON, W. H. (South Pittsburg, Tenn.): Twenty-five specimens of *Stricklandinia* n. sp. and 2 specimens of *Whitfieldella cylindrica* (?). 28827.

BOYCE, S. S. (See under Agriculture, Department of.)

BOYD, Dr. S. B. (Knoxville, Tenn.): Prairie Horned Lark, *Otocoris alpestris praticola*. 29052.

BOYLE, C. B. (See under Mrs. E. H. Du Hamel.)

BRADFORD, ANDREW. (See under Agriculture, Department of.)

BRADLEY, E. J. (Happy Valley Waterworks, South Australia): Foraminifera from South Australia (28885); 2 specimens of Honey Ant, *Camponotus inflatus*, from Alice Springs, MacDonnel Ranges, Central Australia (29248). Exchange.

BRANSON, GEORGE (Bellmore, Ind.): Boat-shaped implement. Exchange. 28457.

BRAVERMAN, M. (Visalia, Cal.): Specimen of chrysoprase from Tulare County, Cal. 29329.

BRENEMAN, A. M. (Washingtonboro, Pa.): Four arrow-heads of quartzite, flint, jasper, and quartz-crystal, a perforator, long cylindrical shell beads, a glass bead of European make, and a fragment of a painted clay pipe. 28313.

BRENINGER, G. F. (Santa Cruz, Cal.): Type specimen of a supposed new Chickadee, *Parus rufescens Breningeri* (gift) (29142); 30 specimens of *Parus rufescens neglectus* (purchase) (29297).

BRETHERTON, B. J. (McCoy, Oreg.): Two eggs (1 set) each of Glaucous-winged Gull, *Larus glaucescens*; Arctic Tern, *Sterna paradisæa;* Red-faced Cormorant, *Phalacrocorax urile*, and nest of the Aleutian Song Sparrow, *Melospiza cinerea*, from Alaska (gift) (28332); through Major Bendire, 12 birds' skins, representing 7 species, from Olympia Mountains, Oregon (gift) (28578); 10 birds' skins from Alaska and Oregon (gift) (28712); 4 specimens of Townsend's Sparrow, *Passerella iliaca unalaschkensis* (exchange) (29414); 3 birds' skins from the coast of Oregon (exchange) (29296); Surf Bird, *Aphriza virgata* (exchange) (29436); skin and skull of Field Mouse, *Peromyscus robustus* (gift) (29453).

BREWSTER, WILLIAM (Cambridge, Mass.): Eleven sparrows, representing 3 species, from Mexico, Arizona, and Texas (deposit) (28968); 171 birds' skins from northern Mexico (deposit) (28900). Returned.

BREZINA, Dr. ARISTIDES. (See under Vienna, Austria, Museum of Natural History.)

BRIMLEY, H. H. & C. S. (Raleigh, N. C.): Five reptiles and batrachians from Arkansas and Texas (purchase) (28409); skin of *Lepus palustris* from North Carolina (purchase) (28579); Banded Watersnake and Banded Skunk from Hot Springs, Ark. (purchase) (28630); 6 Spotted Lizards, 2 Spotted Lizards from Texas, 2 brown snakes, and a nebulous toad (purchase) (28704); 2 wood

BRIMLEY, H. H. & C. S.—continued.
rats, a Pouched Gopher, and specimen of Fremont's Squirrel, from New Mexico (gift) (28796); salamanders (gift) (28886); reptiles from North Carolina and Arkansas (purchase) (28887); skin and skull of a Mink, *Putorius vison* (purchase) (29022); 4 specimens of Xantus's lizards from California (purchase) (29134); 8 reptiles from Texas (purchase) (29336).

BRISBIN, EDWARD (Boise City, Idaho): Antimony ore from a Mexican mine. 28675.

BRITISH MUSEUM (London, England), through Dr. Albert Günther: Three specimens of *Atya occidentalis*. 28918.

BRITTON, Dr. N. L. (Columbia College, New York City): Sixteen plants. Exchange. 28868. (See under Agriculture, Department of.)

BROKAW, L. W. (St. Joseph, Ill.): Five eggs (1 set) of California Pigmy Owl, *Glaucidium gnoma californicum*. 28683.

BROTHERS, Dr. L. J. (Washington, D. C.): Blondinnette Pigeon. 29110.

BROWN, B. S. (Eagle Pass, Tex.): Three species of land shells. 28673.

BROWN, C. F. (Hot Springs, Ark.): Modified quartz crystal (29293); 3 specimens of quartz (29417).

BROWN, J. A. (Bridgeport, Cal.): Travertine from California. 29016.

BROWN, Mrs. J. CROSBY (New York City): Gore, from New Hebrides Island, obtained by Rev. Mr. Plat, and a horn from Holland (29112); square piano made by Broadbent, London, and a Ranat-t'hoom (29145). Exchange.

BROWN, Prof. S. B. (West Virginia University, Morgantown, W. Va.): Fossils of the late Tertiary age (28750); fossil plants (28758).

BRUCE, DAVID (New Brunswick, N. J.), through Prof. J. B. Smith: One hundred and seventy-five specimens, representing 110 species of Noctuidæ. 28834.

BRÜHL, Dr. GUSTAV (Cincinnati, Ohio): Polished stone hatchet from the ruins of Mitla, Mexico. 29324.

BRUNNER, W. S. (See under Agriculture, Department of.)

BRYANT, HENRY G. (Philadelphia, Pa.): Skeleton of a Polar Bear, lacking the feet, obtained from the most northern Eskimos during Mr. Bryant's connection with the Peary Auxiliary Expedition; Pek or skin tent, with frames for the same; commitek or sledge; kaiak or skin canoe, with harpoon lance, also obtained in the same manner (28742); skin of an Arctic Hare, and 4 birds' skins, representing 4 species from Arctic America (29320).

BUCHENAU, F. (See under Agriculture, Department of.)

BUCK, Rev. D. S. (Lepanto, Ark.): Fragments of charred human bones obtained from a mound near Lepanto. 29382.

BULLOCK, L. L. (New York City): Specimen catalogue of impressions from aluminum plates. 28691.

BURNS, FRANK (U. S. Geological Survey): Sea-urchin (exchange) (28331); Mole Shrew, *Blarina brevicauda* (gift) (28964); 3 vertebræ of Zeuglodon from near Columbus, Ark. (gift) (28970); land and fresh-water shells from Mississippi (gift) (28988).

BURROWS, D. B. (Lacon, Ill.): Barred Owl and Red-shouldered Hawk from Texas (29457); through Major Bendire, skin of Cassin's Sparrow, *Peucæa Cassini* (28421).

BUSH, B. F. (See under Agriculture, Department of.)

CAEN, UNIVERSITY OF (Caen, France), through Dr. A. Bigot: Plaster cast of *Pelagosaurus typus*. 29337.

CÆSAR, GERHARD (Franklin Furnace, N. J.): Slickensides. 29508.

CALDWELL, F. S. (Selkirk-on-Hudson, N. Y.): Molding sand. 28820.

CALIFORNIA ACADEMY OF SCIENCES (San Francisco, Cal.), through Dr. J. G. Cooper: Land shells from Lower California. 29340. (See under Agriculture, Department of.)

CALIFORNIA STATE MINING BUREAU (San Francisco, Cal.), through Henry S. Durden. Crystalline rocks (gift) (28620); specimen of *Coralliochama Orcutti*, and a specimen of *Tamiosoma gregaria*, a collection of ores and rocks from California, also minerals from the same locality (exchange) (28803).

CALIFORNIA, UNIVERSITY OF (Berkeley, Cal.), through Samuel J. Holmes: Twenty-six species of crustaceans from the coast of California (28746); Hermit Crabs, *Eupagurus*, from Monterey, Cal. (28966). Exchange.

CAMERON, DON C. (no address): Stone relic resembling a grooved maul, found near Hyattsville, Md. 28625.

CAMERON, ROBERT. (See under G. F. King.)

CAMP, J. H. (Lima, Ohio): Collection from Africa consisting of ethnological objects and ancient pottery, shells, three birds' skins, geological material, specimen of *Polypterus bichir*, and a Spotted Catfish, *Synodontis schal*, mammal pelts, botanical specimens and fibers, reptiles, and 3 crocodile eggs, shrimp, rude stone implements, insects, comprising 268 specimens, representing 31 species, 2 musical instruments, woods, and specimen of gum (28914); shells, mammal skin and bones, also portion of a hippopotamus skull belonging to a skeleton previously transmitted, rocks and sand, ethnological objects, plants and seeds from the same locality (29304).

CAMP, W. B. (Sacketts Harbor, N. Y.): Plaster cast of 2 carved stone pipes. 28910.

CANADA, GEOLOGICAL SURVEY OF (Ottawa, Canada), through Lawrence M. Lambe: Specimen of *Desmacella pennata*, Lambe, and specimen of *Esperella serratohamata*, Carter, from Vancouver Island. Exchange. 29405.

CANBY, W. M. (See under Agriculture, Department of.)

CANDLIN, H. (Kerrville, Tex.): Six snakes. 28780.

CANTERBURY MUSEUM (Christchurch, New Zealand), through F. W. Hutton, curator: twelve specimens, representing 5 species of dried crabs from New Zealand. Exchange. 28759.

CAREY, A. W. (Adrian, Mich.), through Hon. D. N. Morgan: South Carolina paper money, $8, December 23, 1776, 14 silver, nickel, and copper coins of Mexico, Danish West Indies, Great Britain, Switzerland, France, Germany, and the United States. 29373.

CARPENTER, J. W. (See under Agriculture, Department of.)

CARPENTER, M. M., and R. I. WATTERSON (King's Mountain, N. C.): Specimen of cassiterite. 28875.

CARSON, C. J. R. (Los Angeles, Cal.): Mexican Indian armor and Spanish shield. Purchase. 29421. "A."

CASSEL, CAPT. W. H. (See under Druid Hill Park.)

CAVE, J. T. (Leon, Va.): Rhinoceros beetle, *Dynastes tityus*. 28916.

CAYTON, P. L. (Alleghany Station, Va.): Cayton's Cither, invented and made by Mr. Cayton. Purchase. 29267.

CENTRAL HIGH SCHOOL (Duluth, Minn.), through A. J. Woolman: Iron ores from Mesabi Range, St. Louis County, Minn. 28763.

CHAMBERLAIN, Rev. L. T. (Philadelphia, Pa., also New York City): Shells, principally obtained in Africa, to be added to the Lea collection (28356); 20 specimens of minerals, consisting of garnet, beryl, quartz, agate, thomsonite, chlorastrolite, and sodalite, from various localities, to be added to the Lea collection (presented to the Smithsonian Institution and deposited in the National Museum) (28441); 20 specimens, consisting of a carved ornament of quartz from Japan, 2 specimens of quartz with inclusions from the same locality, specimen of turquoise in gangue from New Mexico, carbuncle of garnet, carved ornament of serpentine, 6 Amazon stone balls, 1 mocha stone, 5 chrome iron balls, and other material from various localities, to be added to the Lea collection (presented to the Smithsonian Institution and deposited in the National Museum) (28447); specimen of muscovite, specimen of quartz from Pennsylvania, 3 cut and polished specimens of quartz, wernerite, and quartz with inclusion, to be added to the Lea collection (presented to the Smithsonian Institution and deposited in the National Museum (28486); specimens of Unionidæ and other shells from Central Africa and Borneo for addition to the Lea collection (28913); series of Unios from Pearl River, Jackson, Miss., to be added to the Lea collection (28984); specimen of *Pleuroto-*

CHAMBERLAIN, Rev. L. T.—continued.
maria Beyrichii from Japan (29006); opal from Queretaro, Mexico, to be added to the Lea collection (presented to the Smithsonian Institution and deposited in the National Museum) (29102); 27 species of shells, to be added to the Lea collection (presented to the Smithsonian Institution and deposited in the National Museum) (29123); specimen of spinel (cut) from Ceylon, sunstone (cut) from Norway, gold nugget from California, specimen of crocidolite from South Africa, 2 specimens of asteria (cut) from Ceylon, specimen of essonite engraved, specimen of smoky quartz engraved, garnet necklace from Bohemia, 12 Tassi paste reproductions of antiques from the bequest of Mrs. Frances Lea Chamberlain, through Dr. Chamberlain, (29158); 2 specimens of tourmaline (cut), from Mount Mica, Paris, Me.; specimen of amethyst from Upper Providence, Delaware County, Pa.; specimen of amethyst from Minas Geraes, Brazil; opal on argillaceous limonite, from Baracoo River, Australia, and a specimen of labradorite from Labrador, to be added to the Lea collection (presented to the Smithsonian Institution and deposited in the National Museum) (29159); cabinet collection of 102 plaster casts of medals, cameos and gems (29202); 33 mollusks, (representing 20 species) from the East Indies (presented to the Smithsonian Institution and deposited in the National Museum) (29345).

CHAMBERS, B. L. (U. S. N. M.): Norway Rat, *Mus decumanus*. 29464.

CHANCE, Dr. G. B. (through Hon. C. D. Walcott, Director U. S. Geological Survey): Crystallized gold from Santian District, White Bull Ledge, Cascade Range, Linn County, Oreg. 28657.

CHANLER, WILLIAM ASTOR (Zanzibar, Africa): Fourteen Wa Kamba ethnological objects and a honey bucket from East Africa (28747); mounted specimen of Chanler's Antelope, *Cervicapra Chanleri* (29210); collection of Lepidoptera from Jombéné Range, East Africa (29378); skeleton of Gazelle, type of *Cervicapra Chanleri* (29482).

CHAPMAN, J. H., and Dr. R. W. SHUFELDT (Takoma, D. C.): Skin of a half-grown male Sewellel, *Haplodon rufus*, obtained from Mishawaka, Oreg. 28368.

CHASE, Dr. A. G. (Millwood, Kans.): Cranium of *Bison americanus*, found 25 feet below the surface of the ground. 28749.

CHILBERG, J. E. (See under Young Naturalists' Society, Seattle, Wash.)

CHILTON, CHARLES (District High School, Port Chalmers, New Zealand): Specimens of New Zealand Amphipoda and Isopoda. Exchange. 29149.

CHITTENDEN, F. H. (Department of Agriculture): Tineid Moth, *Laverna brevivitella*, Clem. (28949); specimen of *Podisus cynicus*, Say, from Lewiston, Idaho (28999).

CLAPP, G. H. (Pittsburg, Pa.): Two specimens of a rare variety of *Unio luteolus*, Lam., from Ontario, Canada. 28517.

CLARK, CHARLES U. (Brooklyn, N. Y.): Seventy specimens of North American Coleoptera. 28767.

CLARKE, BRENT (Washington, D. C.): Rude chipped implement from Rock Creek, D. C., 3 small leaf-shaped points from Hyattsville, Md., and 6 arrowheads from Adams County, Pa. Exchange. 28669.

CLARKE, Prof. F. W. (U. S. Geological Survey): Crystal of triplite from Stoneham, Me. Purchase. 29080.

CLARKE, Mrs. L. J. (Parsons, Pa.), through E. H. Hawley: Coal plants. 28664.

CLARKE, Prof. JOHN M. (Albany, N. Y.), through Interior Department, U. S. Geological Survey: Type specimens of *Acanthodes pristis* and *Palæoniscus devonicus*. 28829.

CLEVELAND, CINCINNATI, CHICAGO AND ST. LOUIS RAILROAD COMPANY (Cincinnati, Ohio), through Schuyler Hazard, assistant engineer: Collection of railroad rails, spikes, and chairs laid on the Mud River and Lake Erie Railroad previous to 1840. 29492.

COBOLINI, LOUIS (Rockport, Tex.). Shells, specimen of dried *Ostracion*, pharyngeal bone of *Pogonias*, and scale of *Megalops*, 4 starfishes and a crab, seeds (29136); snout of sawfish, scales of a Tarpon and a dried Malthe also

COBOLINI, LOUIS—continued.
photograph of 5 Tarpons and ear bones of a Redfish, crabs and coral, seeds from the coast of Texas, 7 species of marine shells from the coast of Texas, and an egg case of *Fulgur* (29444).

COCKERELL, Prof. T. D. A. (Agricultural College, Las Cruces, N. Mex.): Horned Toad, *Phrynosoma modestum* (28622); reptiles and batrachians (28975); snakes (28978); salamander and young Kangaroo Rat, *Perodipus ordii* (29053).

COHEN, Rev. HENRY (Galveston, Tex.): Four volumes of the Liturgy of the Bene Israel of Bombay in the Morathi language (Presented to the Smithsonian Institution and deposited in the National Museum.) 28698.

COLLINS, FRANK S. (See under Agriculture, Department of.)

COLONIZATION SOCIETY (Washington, D. C.), through J. O. Wilson, secretary: Collection of clothing, illustrating the industrial products of the tribes of Liberia, Mozambique, and adjacent country. Deposit. 28346.

COLUMBIA COLLEGE (New York City). (See under Agriculture, Department of.)

CONANT, B. H. (Wenham, Mass.): Six photographs of ancient half-mile stones in Wenham, and photographs of portraits of Hugh Peters, Capt. James Mugford, and John Rhodes Russell. 28570.

CONGER, Miss K. E. (Chico, Cal.): Bulbs. 29288.

CONVERS, E. B. (New York City): Copy of a medal to be awarded for "Bravery in saving life at sea," founded by a citizen of the United States at Tynemouth, England. 28822.

COOKE, Miss J. M. (San Diego, Cal.): Marine shells from San Diego and additional specimens collected by Capt. George D. Porter in Lower California, representing 46 species and varieties. 29328.

COPP, J. BRENTON (Old Mystic, Conn.): Collection of colonial household utensils and wearing apparel. 28810.[1]

COOPER, Dr. J. G. (See under California Academy of Sciences.)

CORNELL UNIVERSITY (Ithaca, N. Y.). (See under Agriculture, Department of.)

CORNMAN, C. T. (Carlisle, Pa.) White Silky Bantam hen, in the flesh (29072); Black Silky Bantam, in the flesh (29314).

COSSMANN, M. (Paris, France): Specimens of *Gladius Bayleyi*, Desh, and *Cassis cancellata*, Lam., from the middle Eocene formation of France. 29040.

COSTA RICA, NATIONAL MUSEUM OF (San José, Costa Rica), through Señor J. Fid Tristán: Minerals from the vicinity of Monte Redondo and La Mina, Rio Torres, limestone containing *Pecten*, sp. 28474.

COULTER, J. M. (See under Agriculture, Department of.)

COUNTESS, Miss CALLIE (Cottondale, Ala.): Mole. 28682

COVERT, A. B. (Ann Arbor, Mich.): Two birds' skins, consisting of Wheatear, *Saxicola œnanthe*, and King Rail, *Rallus elegans*, from Michigan, the former new to the avifauna of the State. 29659.

COVILLE, FREDERICK V. (See under Agriculture, Department of.)

COX, Master EMERY (Brightwood, D. C.): Mole, *Scalops aquaticus*. 28703.

COX, Master EMERY and Miss HAZEL (Brightwood, D. C.): Pine mouse, *Arvicola pinetorum*, in the flesh (29246); mole, *Scalops aquaticus* (29525).

COX, Miss HAZEL (Brightwood, D. C.): Mole, *Scalops aquaticus*. 28732.

COX, PHILIP (Upper Maugerville, New Brunswick): Three specimens of White Fish, *Coregonus labradoricus* and *Coregonus quadrilateralis*. 28395.

COX, W. V. (chief clerk, U. S. National Museum): Larger Digger Wasp, *Sphecius speciosus* and Dog Day Harvestfly, *Cicada tibicen*. 28396. (See under Rev. G. T. Wilmar.)

CRANCH, Mrs. CHARLOTTE D. (Urbana, Ohio): Collection of engravings obtained by the late John Cranch in Italy. 29209.

[1] Presented to the Smithsonian Institution and deposited in the National Museum. Accessions 28273 and 27084, received from Mr. Copp in previous years and referred to in the accession lists in the Museum Reports, were also presented to the Smithsonian Institution.

CRANDALL, C. S. (See under J. N. Rose.)

CRAWFORD, J. E. (Coletown, Tex.): Piece of a plank containing a bullet embedded a century ago. 28451.

CREELMAN, Prof. S. C. (See under Agricultural and Mechanical College.)

CREVECŒUR, F. F. (Onaga, Kans.): Twenty-nine species of Lepidoptera (28462); 35 specimens of Lepidoptera (28537); 66 species representing miscellaneous insects (28612); 50 species of miscellaneous insects (28768).

CROSBY, F. W. (Washington, D. C.), through Prof. W. O. Crosby: Building stones and marbles from Egypt. Purchase. 28500.

CROSBY, Prof. W. O. (Massachusetts Institute of Technology, Boston, Mass.): Travertine from Tivoli and leucite basalt from Tavolato, Italy. Exchange. 28818. (See under F. W. Crosby.)

CROSS, WHITMAN. (See under Interior Department, U. S. Geological Survey, and C. A. Martine.)

CROUSE, C. M. (Syracuse, N. Y.): Polished stone hatchet with wooden handle. Deposit. 29458.

CROWFOOT, JOSIAH (San Miguel, Cal.): Two sea-urchins and two large fossil oyster shells, *Ostrea titan*, from San Miguel. 29434.

CROWLEY, W. B. (Washington, D. C.): Water lizard or Triton. 28733.

CRUMP, L. B. (Winston, Va.): Ten arrow-heads. 28516.

CULIN, STEWART (University of Pennsylvania, Philadelphia, Pa.): Three casts of Egyptian and Etruscan dice (28526); modern games and toys (28979). Exchange.

CUNNINGHAM, B. L. (Fort Klamath, Oreg.): Two specimens of *Ranatra quadridentata*, Stål. 28969.

CURRIER, Rev. C. W. (Necker, Md.): Forty-three arrow-heads, large chipped implement, and a stone pendant from Baltimore County; 58 arrow-heads from Prince George County. 29165.

CURTISS, A. H. (See under Agriculture, Department of.)

DALL, W. H. (U. S. Geological Survey): Six species of *Marginella* and *Conus* from Africa (28328); 6 specimens of *Helix hortensis* from House Island, near Magnolia, Mass. (28488).

DALRYMPLE, Dr. E. S. (Branchville, N. J.): Plaster cast of a grooved stone slab, the original of which was found on the bank of the Delaware River, Sussex County, N. J. 28919.

DANIEL, Dr. Z. T. (Pine Ridge Agency, S. Dak.): Skin-scraper blade of chert or flint (23525); moccasin from the battlefield of Wounded Knee and 2 worked flakes of flint from White Clay Creek (28702); 6 worked flakes of jasper and chalcedony from White Clay Creek (28897); 5 flint scrapers from the same locality (29116); 50 rudely worked flakes and 2 arrow-heads (29307); specimen of *Sphinx albescens*, Tepper (29392).

DANNHAUSER, MAX (Brooklyn, N. Y.): Highflyer Pigeon, in the flesh (28425); Red Holland Pigeon (28895).

DAVENPORT, G. E. (Medford, Mass.): Five type specimens of Mexican ferns. 29130.

DAVEY, M. A. (Galveston, Tex.): Five species of crabs. 29419.

DAVIDSON, Dr. A. (See under Agriculture, Department of, and J. N. Rose.)

DAVIS, A. P. (See under John A. Vogleson.)

DAVIS, Prof. G. C. (Agricultural College, Mich.): Four specimens of *Bassus*, representing 2 species (new to the Museum collection). 28403.

DAVIS, N. L. (Albion, N. Y.): Specimens of Harlan's Hawk, *Buteo Harlani*, and a specimen of Plumbeous Chickadee, *Parus carolinensis agilis*, from Texas. 28815.

DAVIS, S. M. (Washington, D. C.): Flint perforator from Washington County, Pa. 28513.

DAVISON, J. L. (Lockport, N. Y.), through Major Bendire, U. S. Army: Capped quartz crystals. 28532.

DAY, Dr. DAVID T. (U. S. Geological Survey): Eight specimens of rocks and ores from various localities. 28993.

DEAN, S. B. (Arlington, Mass.): Twelve pieces of heating and illuminating apparatus. Purchase. 28994.

DE CANDOLLE HERBARIUM (Geneva, Switzerland). (See under Agriculture, Department of.)

DELANEY, J. M. (South Livonia, N. Y.): Twenty specimens of *Trombidium* sp. 29175.

DEMMING, H. C. (Harrisburg, Pa.): Specimen of molybdenite (28468); specimen of gummite and 2 specimens of serpentine from Spruce Pine, Mitchell County, N. C. (28504.)

DENNISON, C. E. (Smiths Island, Wash.), through G. W. Dennison: Tooth of a mammoth. 29396.

DENNISON, G. W. (Smiths Island, Wash.): Small collection of birds' eggs, consisting of 12 specimens representing 5 species from Puget Sound (28971); 5 birds' skins, representing 5 species from Smiths Island (29227); large tooth of a mammoth found 62 feet below the surface of the ground (29395); 2 birds' skins from Washington, consisting of a Rusty Song Sparrow, *Melospiza fasciata guttata*, and a Western Savanna Sparrow, *Ammodramus sandwichensis alaudinus* (29399); 3 eggs of *Cerorhinca monocerata* (29426). (See under C. E. Dennison.)

DEYROLLE, EMILE (Paris, France): Model of the end of a finger (purchase) (29442); 2 series of embryological models, illustrating the development of the trout and the starfish (purchase) (29443) "A;" 7 anatomical models (purchase) (28824).

DIETRICH, H. M. (Anna, Ill.): Lithographic limestone. 28697.

DIGGS, C. W. (U. S. National Museum): Regal Walnut Moth, *Citheronia regalis* (28342); Mourning-cloak Butterfly (29499).

DILLER, Dr. J. S. (U. S. Geological Survey): Specimen of wavellite from Montgomery County, Ark. 29187. (See under Prof. F. C. Phillips.)

DODGE, BYRON E. (Richfield, Mich.): Perforated heart-shaped stone (28554); flint drill or perforator (28835). Deposit.

DONAGHUE, C. W. (Trenton, N. J.): Fire-clay pins. 29311.

DORSEY, Dr. H. W. (New Market, Md.): Single-comb Brown Leghorn fowl, in the flesh. 29059.

DROPPERS, GARRETT (Keiogijuku University, Tokio, Japan): Crustaceans from Japan. Purchase. 28653.

DRUID HILL PARK (Baltimore, Md.), through Capt. W. H. Cassell, superintendent: Young camel, in the flesh. 28465.

DRUMMOND, Dr. I. W. (New York City): "Rosin" opal from Cuba. 28894.

DUDEN, H. (New Albany, Ind.): Fifty American beetles (28397); 30 specimens of Coleoptera (28454).

DUGÈS, Prof. ALFRED (Guanajuato, Mexico): Four leeches and 7 specimens of *Sphæroma*, also 3 named species of Arachnida (28357); specimens of *Thelyphonus giganteus* and *Myrmecocystus melliger*, snout of a Sawfish, *Pristis pectinatus*, incomplete skeleton of Mexican Kangaroo Rat, *Dipodomys ornatus*, alcoholic specimen of Grebe, *Podilymbus podiceps*, crustaceans, starfishes, and a gorgonian (28845); 26 species of Mexican Hymenoptera and Orthoptera (28883); large fragment of the inner bark of a sapotaceous tree (29365).

DU HAMEL, Mrs. E. H. (Washington, D. C.), through C. B. Boyle: Model of the schooner *Flying Fish*. Deposit. 28335.

DUNNING, S. N. (Hartford, Conn.): Series of Coleoptera, Hymenoptera, and Hemiptera, from Washington and Vermont. 28536.

DURDEN, HENRY S. (See under California State Mining Bureau.)

EARLL, R. EDWARD (U. S. N. M.): Three House Mice, *Mus musculus*. 28958.

EASTWOOD, Miss ALICE (California Academy of Sciences, San Francisco, Cal.): Specimen of *Velæa Kelloggii* from California. 28972.

EATON, A. B. (See under Agriculture, Department of.)

EDWARDS, A. C. (Spokane, Wash.): Facsimile of an old-fashioned pocket knife Deposit. 28323.

EGGLESTON, W. W. (See under Agriculture, Department of.)

EGLESTON, Prof. T. (School of Mines, New York City): Labels for mineral collections. 29186.

ELROD, Prof. M. J. (Wesleyan University, Bloomington, Ill.): Eight specimens of Unionidæ from the northwestern part of the United States (28863); 23 plants from the western section of the United States (29038). (See under Illinois Wesleyan University.)

ELSTUN, Dr. W. J. (Medical Division, Pension Office, Washington, D. C.): Two skins with skulls of Cottontail Rabbit (*Lepus sylvaticus*) and Pocket Gopher (*Geomys tuza floridanus*). 29446.

ELY, J. K. (See under Agriculture, Department of.)

ELY, T. N. (See under Pennsylvania Railroad Company.)

EMMERICH, Lieut. C. F. (U. S. Navy): Two Satsuma plaques. Deposit. 28711.

EMMONS, S. F. (See under Interior Department, U. S. Geological Survey.)

ENGLE, H. M. (Roanoke, Va.): Specimen of tscheffkinite from Bedford County, Va., and a specimen of samarskite from North Carolina. 29292.

ENGLISH, GEORGE L., & CO. (New York City): Twenty-three specimens of minerals, consisting of magnetite, calcite and pyrite, smithsonite, chondrodite, atacamite, leadhillite, fluorite, galena, molybdenite, clinochlore, and others, from various localities (purchase) (28464); opal from near Moscow, Idaho (purchase) (29184) "A"; graphite from near Harney City, S. Dak.; melanotekite from Pajsberg, Sweden; sphalerite from Rodna, Transylvania; langbanite from Langbanhyttan, Sweden; låvenite from Langesund-fiord, Norway; cosalite from Nordmark, Sweden; cobaltite from Enngrugooma, Sweden, and bindheimite from Endellion, Cornwall (purchase) (29185); 2 specimens of labradorite, 2 specimens of covellite, specimen of pyrite, 4 specimens of topaz, and 2 specimens of clinochlore (purchase) (29502) "A".

EVANS, H. W. W. (See under G. M. Moliner.)

EVERMANN, Prof. B. W. (U. S. Fish Commission): Two species of Unionidæ from Idaho. 28773.

EWIN, J. L. (Washington, D. C.): United States letters patent for improvement in street-lighting apparatus, 1874; English letters patent for improvement in horseshoes, 1879; English letters patent for vulcanizable waterproof gum, 1873, showing method of issuing patents. 28414.

EWING, R. M. (Franklin, Tenn.): Plant. 29522.

FAIRBANKS, H. W. (Berkeley, Cal.): Twelve specimens of *Aucella piochii*, Gabb, and 15 specimens of *Aucella crassicollis*, Keyserling, from San Luis Obispo County, Cal. 28865.

FARNHAM, A. B. (Bennings, D. C.): Two arrow-heads and 12 worked flakes from Prince George County, Md., and the District of Columbia. 29473.

FARRINGTON, O. C. (See under Field Columbian Museum.)

FELAYA, His Excellency J. SANTOS. (See under Nicaragua, Government of.)

FELLOWS, G. S. (New York City): Onyx marble from Brazil. 28717.

FICK, G. A. (Baltimore, Md.), through E. S. Schmid: Spangled Swallow Pigeon (28688); White Barred Blue-winged Pigeon, in the flesh (29330).

FICKE, C. A. (Davenport, Iowa): Five casts of terra cotta molds, the originals of which were found in Mexico. 28772.

FIELD COLUMBIAN MUSEUM (Chicago, Ill.), through O. C. Farrington: Geological material. Exchange. 28781.

FIGGINS, J. D. (Kensington, Md.): Field Mouse, *Peromyscus leucopus*, and Red Squirrel, *Sciurus hudsonicus* (28387); Red Squirrel, *Sciurus hudsonicus* (28496); a collection of mammal skins and skulls from Maryland (28643); collection of mammal skins and skulls from Maryland (28718); Red Squirrel, *Sciurus hudsonicus* (28957); 30 skins and 17 skulls of mammals from near Kensington (29143); specimens of Flying Squirrel, *Sciuropterus volucella* (29272).

FISCHER ART COMPANY (New York City): Chromo-collograph. Purchase. 28739.

FISH COMMISSION, U. S., Col. Marshall McDonald, Commissioner of Fish and Fisheries: Collection of crustaceans, principally Anomurans, obtained from the Pacific coast investigations of the *Albatross* (28626); types of 14 new species of fresh-water fishes, obtained by field parties of the Commission (28636); collection of fishes made in Texas during November and December of 1891 by a field party in the course of investigations relative to the establishment of a hatching station (28945); collection of fishes made in Tennessee and Kentucky by Prof. P. H. Kirsch during August of 1891 (28977); plants

FISH COMMISSION, U. S.—continued.
from Attu Island, Alaska, collected during the summer of 1894 by Lieutenant Jacobs, U. S. Navy; 39 birds' eggs, representing 5 species, from Agattu Island, Alaska, slate knife, flake, 3 grooved sinkers, and 3 water-worn pebbles from a kitchen midden on the east end of Agattu Island, obtained by Mr. C. H. Townsend, of the steamer *Albatross*, alcoholic specimen of eider duck from the same locality, and ear bone of an adult whale from St. Paul Island, skin of a large bull fur seal from St. Paul Island, Alaska, skin of an albino pup fur seal, and skull of a young whale, collected during the cruise of the *Albatross* in 1894 (29074); collection of foraminifera obtained from the dredgings of the *Albatross*, also 2 lots of crinoids (29281); crustaceans collected principally during the investigations of the *Albatross* on the western coast of North America and in the North Pacific Ocean (29385); holothurians obtained by the *Albatross* expedition in 1891 off the western coast of Central America, Mexico, and the Guatemala region (29412).

FISHER, Dr. A. K. (Department of Agriculture): Fresh-water and land shells from Chiricahua Mountains, Arizona. 28501. (See under Agriculture, Department of, and Gustav Kohn.)

FISHER, W. H. (Baltimore, Md.): Silver perch, *Sciæna chrysura*, from Gunpowder River, Maryland. 28601.

FLOOD BROTHERS (Malden, Mass.): One hundred and thirty specimens of North American Coleoptera (28499); 125 species of North American and exotic Coleoptera (28627).

FOOTE, Dr. A. E. (Philadelphia, Pa.): Specimen of sphærocobaltite from Boleo, near Santa Rosalia, Lower California (exchange) (28442); 14 glass models of crystals (purchase) (29289) "A".

FORBES, H. O. (Liverpool, England): Three leg bones of an extinct species of goose (*Cnemiornis calcitrans*), from South Island, New Zealand. 29437.

FORD, JOHN (Philadelphia, Pa.): Six specimens of *Mactra*, variety *Ravenelii*, Conrad, from the coast of New Jersey. 29433.

FORD, T. C. (Frederick, S. Dak.): Four skins of Richardson's Spermophile, *Spermophilus Richardsoni*. 29483.

FOSTER, J. H. (Marshall, Va.): Two small Lamprey eels, *Petromyzon marinus*. 29221.

FOWLER, FRED. H. (Fort Bowie, Ariz.): Nest and 4 eggs of Hepatic Tanager, *Piranga hepatica*, from southern Arizona (28345); 12 eggs (4 sets) of Scorched Horned Lark, *Otocoris alpestris adusta* (28539).

FRAZER, Mrs. A. E. (Dakota City, Nebr.): Drilled ceremonial object (pick-shaped) from near Napoleon, Ohio. Purchase. 29494.

FREDHOLM, A. (Washington, D. C.): Herbarium specimen. 28965. (See under Agriculture, Department of.)

FREY, J. H. (Cincinnati, Ohio): Photograph of Mr. J. E. Hinds. 28938.

FRIERSON, L. S. (Friersons Mills, La.): Fresh-water shells from Louisiana. 28489.

FRY, WILLIAM E. (Rondubusch, South Africa), through Prof. Cleveland Abbe: Collection of photographs descriptive of the scenery in the vicinity of the Zambesi River and the neighborhood of Victoria Falls. 28604. (Presented to the Smithsonian Institution, and deposited in the National Museum.)

FURMAN, C. M., Jr. (Clemson College, S. C.): Stone tube. Purchase. 28809.

FUSS, J. F. (Atlanta, Ga.): Larva of Cochliopod Moth (*Isa inornata*), G. & R. 28655.

GADOW, Dr. H. (Cambridge, England): Goatsucker, *Podargus;* Swift, *Cypselus apus;* Goatsucker, *Caprimulgus;* Honey Creeper, *Certhiola*. Exchange. 29078.

GADDESS, T. S. (Baltimore, Md.): Yellow Tumbler Pigeon. 28953.

GANNAWAY, C. B. (Fort Smith, Ark.): Ceremonial object plowed up near Waldron. Purchase. 29408.

GARDNER, A. L. (Vermillion, N. Y.): Silky Japanese fowl (28656); White-crested white Polish Cockrel; Silver-penciled Hamburg Cockrel, and Silver-penciled Hamburg Pullet, in the flesh (28801).

GARDNER, J. (Savannah, Ga.): Song Sparrow, *Melospiza fasciata*, in the flesh, with abnormal plumage. 28967.

GARNIER, Dr. J. H. (Lucknow, Ontario, Canada.): Two specimens of *Menobranchus latastei*. Exchange. 29033.

GARVEY, D. D. (Duluth, Minn.): Clay concretions. 28482.

GEORGIA GEOLOGICAL SURVEY (Atlanta, Ga.), through W. S. Yeates, State geologist: Meteoric iron, weighing 189 grams. 29081.

GERMAN KALI WORKS (New York City): Collection of mineral salts from Stassfurt, Germany. 28354.

GERRARD, EDWARD, jr. (Camden Town, London, England): Four birds' skins, representing 3 species, from Borneo and Colombia. Purchase. 28762.

GETSCHMANN, R. (Rixdorf, near Berlin, Germany): Diatomaceous earth. Exchange. 29177.

GILBERT, C. H. (See under Agriculture, Department of, and Leland Stanford Junior University.)

GILBERT, Prof. G. K. (See under Interior Department, U. S. Geological Survey.)

GILCHRIST, F. C. (Fort Qu-Appelle, Assinaboine, Canada): Specimens of *Acipenser, Moxostoma, Catostomus, Coregonus, Stizostedion,* and *Platygobio gracilis,* from the lakes of the Northwest Territory. 29191.

GILL, C. G. (Tulane University, New Orleans, La.): Larva of wood-boring beetle (*Ernobius* sp.). 28684.

GILL, Dr. THEO. (See under J. Douglas Ogilby.)

GLEN ISLAND MUSEUM (Glen Island, N. Y.), through L. M. McCormick: Mollusks from the Red Sea, ethnological objects from Africa, marine invertebrates from the Gulf of Aden (29431); ethnological objects from the western coast of Africa (28638). Exchange.

GOLDEN, R. A. (Washington, D. C.): Skin of Dusky Shark, *Carcharhinus obscurus,* from the Potomac River at Glymont, Md. 28429.

GOLDMAN, Mr. (See under Agriculture, Department of.)

GOODE, Dr. G. BROWN (Assistant Secretary Smithsonian Institution, in charge of U. S. National Museum): Japanese temple drum and drumsticks, Japanese helmet (deposit) (28423); etching, portrait of Mrs. Harrison Gray Otis, by S. A. Schoff after Steuart (gift) (28692).

GORE, Prof. J. HOWARD (Columbian University, Washington, D. C.): Eight photographs of Congo negroes. 28590.

GOULD, C. N. (Arkansas City, Kans.): Four specimens of *Archæocidaris spines,* 4 specimens of *Productus semireticulatus,* specimen of *Productus* sp., 6 specimens of *Seminula subtilita* and *Seminula* sp. (29232); specimen of *Pleurotomaria* (29402); 10 species of Permo-Carboniferous fossils from Kansas and Indian Territory (29481).

GRAHAM, H. D. (Ashland, Ohio): Thirty specimens of Devonian drift corals. Exchange. 29070.

GRAM, N. C. (U. S. consular agent, Dyrefjord, Iceland): Two bedboards of Icelandic manufacture. 28543.

GRANT, ALLEN (Tarrytown, N. Y.): Bearded Polish Bantam, Polish Bantam hen, 3 Silver Seabright Bantams (29050); Silver Seabright Bantam hen (29416).

GRAVES, F. P. (Doe Run, Mo.): Lead silicates (furnace product). 28461.

GRAVES, R. H. (Mount Wilson, Md.): Chinese manuscript book with colored plates illustrating the Miao Tsz, or Aborigines. 29397.

GREEGOR, ISAIAH (Cuyahoga Falls, Ohio): Seven fragments of pottery from a mound on St. Johns River, near Jacksonville. 28312.

GREEN, B. F. (Superintendent of Construction, National Library Building, Washington, D. C.): Modeling clay from Ravenswood, Long Island. 28351.

GREENE, E. L. (See under Agriculture, Department of.)

GREENWOOD, G. G. B. (Minerva, Ohio.): Sixteen rude chipped implements from Carroll and Stark counties (28819); 12 chipped stone implements from Carroll County, and a concretion from Tuscarawas County (29108). Exchange.

GREGER, D. F. K. (Fulton, Mo.): Devonian and Carboniferous fossils (exchange (28365); Choteau shale containing fossils (gift) (28920).

GRIBBLE, ROBERT (Roland, Tex.): Tooth of Shark (*Lamna cuspidata*), (28362); fossil bones and sharks' teeth (28433).

GRIFFIN, C. M. (Shelter Island, N. Y.): Light Brahma hen. 29199.

GROVER, W. E. (Galveston, Tex.): Three birds' skins, representing 2 species. 28672.

GUNDLACH, Dr. JUAN (Habana, Cuba): Cuban Macaw, *Ara tricolor;* Crow, *Corvus minutus;* 2 Herons (*Butorides brunnescens* and *Florida cærulea*), (melanistic). 28813.

GUNNING, Mrs. MARY (Boston, Mass.): Two volumes of mounted Algæ from the Pacific and Atlantic coasts of the United States. 28581. (Presented to the Smithsonian Institution and deposited in the National Museum.)

GÜNTHER, Dr. ALBERT. (See under British Museum, London, England.)

GUTHRIE, O. (Felts Mills, N. Y.): Bowlder from the glacial drift (28347); bowlders from ground moraine (28889).

GWYN, Dr. C. L. (Galveston, Tex.): Shells (28837); Miocene fossils from the artesian well in Galveston (29044); 6 species of marine shells from the beach at Galveston, and Miocene fossils from levels in artesian well (29085); 3 crabs, representing 3 species (29355).

HADDON, Dr. A. C. (Inisfail, Hills Road, Cambridge, England): Twenty-four ethnological objects from New Guinea. Exchange. 29310.

HAGUE, ARNOLD. (See under Interior Department, U. S. Geological Survey).

HALTON, W. H. (Mountaingrove, Mo.): Two photographs of stone implements and pottery. 28515.

HAMLIN, HOMER (San Diego, Cal.): Ammonite, *Pachydiscus suciænsis,* Meek, from Point Loma (exchange) (28509); Tertiary and other fossils from the vicinity of San Diego (gift) (29049); 5 arrow-heads from Pine Island, Minnesota, 7 arrow-heads and a small stone chisel from San Diego (gift) (29325).

HAMLINE UNIVERSITY (St. Paul), through Prof. H. L. Osborn: Two species of Unionidæ from Minnesota (29308); collection of land and fresh-water shells, and a few marine shells from the Philippine Islands (29430).

HANSKE, E. A. (Bellevue, Iowa): Swift Lizard, *Cnemidophorus sexlineatus,* from the shore of the Mississippi River. 28909.

HARFORD, HORACE (Petaluma, Cal.): Two abnormally colored eggs of Crow, *Corvus americanus.* 29387.

HARLOW, Lieut. C. H., U. S. Navy (Newport, R. I.): Model of a grass boat or "Balsa," made by the Amara Indians. Deposit. 28339.

HARRISON, Judge BENJAMIN (Jacksonville, Fla.): Four crabs, *Panopeus Harrisii,* from St. Johns River. 28381.

HARRISON, G. G. (Brandon, Va.): Thirty-seven arrow-heads from Jamestown Island; 35 arrow-heads and 2 spear-heads from Brandon. 28874.

HARRISON, MARK E. (Greenfield, Mo.): Scrapers, rude notched axes, and leaf-shaped implements of flint; paint stones and other articles of hematite from Dade and Cedar counties. Deposit. 28176. (Returned.)

HARSHBARGER, W. A. (Topeka, Kans.): Aberrant specimen of *Papilio Turnus* (29174); 30 specimens of North American Coleoptera (29303).

HARTLEY, W. P. (Mount Jackson, Pa.): Pupa of Hawk Moth, *Protoparce carolina.* 29043.

HARVARD UNIVERSITY (Gray Herbarium, Cambridge, Mass.): Three hundred and thirty-six herbarium specimens. Exchange. 28867.

HASKELL, Miss B. A. (Philadelphia, Pa.): Nymph of a water bug (*Pedinocris* sp.) 29243.

HAWLEY, E. H. (See under Mrs. L. J. Clarke.)

HAY, W. P. (Central High School, Washington, D. C.): Crustaceans from New Zealand (exchange) (28330); 3 specimens of stalagmite from Shiloh Cave, Bedford, Ind. (gift) (29058); 7 frogs from Virginia (gift) (29533).

HAY, F. S., U. S. Army (Fort Huachuca, Ariz): Septarian nodule from near Fort Wingate, N. Mex. 28472.

HAYWOOD, WESTERVELT (Rutherford, N. J.): Six game Bantams. 29051.

HAZARD, SCHUYLER. (See under Cleveland, Cincinnati, Chicago and St. Louis Railroad Company.)

HEATHCOTE, W. H. (Preston, Lancashire, England): Oak model of the first canoe found in the dock excavations at Preston. 28929. (Presented to the Smithsonian Institution and deposited in the National Museum.)

HEDLEY, CHARLES (Australian Museum, Sydney, New South Wales): Specimens of *Magasella Cumingii*, Dav., from Australia. 28847.

HEILPRIN, WILLIAM (Washington, D. C.): Isopod crustaceans from the Potomac Flats. 28364.

HEMPHILL, HENRY (San Diego, Cal.): Mexican mollusks from bottom of a Mexican vessel in San Diego Harbor; also marine shells. 28995.

HENRY, J. H. (Easton, Md.), through B. E. McHale: Young turkey, showing abnormal growth. 28565.

HENSHAW, H.W. (See under Smithsonian Institution, Bureau of Ethnology.)

HERMAN, W. W. (Boston, Mass.): Eight species of Japanese shells (28327); marine shells from Japan (29073); shells, 3 specimens of echini, and a hydractinian from the same locality (29097); crustaceans and echinoderms (29141).

HERRERA, Prof. A. L. (See under Mexico, National Museum of).

HERRICK, C. J. (Granville, Ohio): Plaster cast of an inscribed stone, the original of which was found in Newark, Ohio. 28852.

HETZEL, Miss S. R. (Clifton Station, Va.): Terrapin. 29432.

HIDDEN, W. E. (Hiddenite, N. C.): Specimen of rowlandite from Blanco County, Tex. 28440.

HILL, E. J. (Englewood, Ill.): Two herbarium specimens of Tradescantia. 29491.

HILL, Prof. R. T. (U. S. Geological Survey): Land shells from Panama and Costa Rica (29107); pelts of mammals from Panama (29133).

HILL, Dr. W. H. (Mooresville, Ala.), through O. M. Hundley: Stone taken from the bladder of a hog. 28799.

HILLEBRAND, Dr. W. F. (U. S. Geological Survey): malakon from North Carolina; 3 specimens of uraninite from Joachimsthal, Bohemia; uraninite from Prebram, Bohemia; specimens from Hales Quarry, Glastonbury, and from Branchville, Conn.; geological specimens from Moss and Arendal, Norway. 29219. (See under W. G. Waring).

HILLMAN, F. G. (New Bedford, Mass.): Two natural formations of clay ironstone from Gay Head, Martha's Vineyard, Mass. 28890.

HILLS, EDWARD, SON & CO. (New York City): Gum copal from New Zealand, Malay Peninsula, and Africa. Purchase. 28514.

HIX, T. W. (Santee, Ga.): Asbestos from near Cleveland, Ga. 29265.

HOADLEY, G. W. (Phœnix, Ariz.): Black material resembling stone coal, found in mounds near Phœnix. 28615.

HOBBS, F. W. (See under Arlington Mills.)

HOLCOMB, E. G. (Helena, N. Y.): Two spear-heads, 3 polished hatchets, 3 gouges, and a polishing tool. Exchange. 28989.

HOLMES, S. J. (University of California, Berkeley, Cal.): Two specimens of *Pinnixa* from Mendocino County. Exchange. 28676. (See under California, University of.)

HOLZINGER, J. M. (See under Agriculture, Department of.)

HOOPES, JOSIAH (West Chester, Pa.): Western Grasshopper Sparrow, *Ammodramus savannarum perpallidus*, from North Dakota. 29488.

HOPKINS, H. A. (Grand Rapids, Mich.): Commission of Hannibal M. Allen as captain of artillerists, dated May 6, 1812, signed by James Madison, President of the United States. Deposit. 28415. (Returned.)

HORNOR, C. G. (Baxter Springs, Kans.): Six arrow-heads from Cherokee County, Kans. 29317.

HOUGH, Dr. WALTER (U. S. National Museum): Fossil plants from Morgantown, W. Va. 28663.

HOW, C. H. (Addison, W. Va.): Rhinoceros Beetle, *Dynastes tityus*. 28463.

HOWARD, Prof. L. O. (Department of Agriculture): Land shells from Brownsville, Tex. 29201. (See under George B. King.)

HOWELL, E. E. (Washington, D. C.): Cranium of *Portheus molossus* (exchange) (28363); male specimen of Hercules Beetle, *Dynastes hercules*, from the West Indies (exchange) (28632); 3 specimens of *Nanina* from the East Indies (exchange) (28793); 3 specimens of Cañon Diablo iron, polished slice of Cañon Diablo iron, wax opal from the State of Washington, jasper opal from the same locality, and specimen of

HOWELL, E. E.—continued.
precious opal from Australia (purchase) (28825) "A"; meteorite from Kisen, Japan, and a meteorite from Cañon Diablo, Arizona (purchase) (28925) "A"; meteoric iron weighing 573 grams, from El Capitan, N. Mex. (gift) (29079).

HOWELL, JOSEPH. (See under Agriculture, Department of.)

HOWELL, THOMAS. (See under Agriculture, Department of.)

HOYLE, WILLIAM E. (See under Manchester Museum, Manchester, England.)

HUBBARD, HENRY (Department of Agriculture): Specimen of *Rana æsopus*, from Crescent City, Fla. 29363.

HUGHES, Lieut. W. N., U. S. Army (Columbia, Tenn.): Trenton limestone containing Brachiopoda, *Orthis testudinaria* and *Orthis subæquata*. 28705.

HUNDLEY, O. M. (See under Dr. H. W. Hill.)

HUNT, Miss L. L. (San Carlos, Ariz.): Wood-boring larva of *Prionus californicus*. 28694.

HUNTINGTON, W. (Washington, D. C.), through Washington Nailor: Stone pestle marked with incised lines, obtained from a cliff ruin on the Colorado River at the head of Grand Cañon. Deposit. 29521.

HURTER, JULIUS (St. Louis, Mo.): Three lizards and a snake. Exchange. 28791.

HUTTON, F. W. (See under Canterbury Museum, Christchurch, New Zealand.)

IDAHO, UNIVERSITY OF. (See under Agriculture, Department of.)

ILLINOIS WESLEYAN UNIVERSITY (Bloomington, Ill.), through Prof. M. J. Elrod: Specimen of Swainson's Hawk, *Buteo Swainsoni*. 29076.

IM THURN, E. F. (Government Agency, Northwest District, British Guiana: Collection of plants. 28670.

INDIAN MUSEUM (Calcutta, India), through Surg. Capt. A. Alcock, M. B., superintendent: Small collection of deep-water fishes from the Bay of Bengal, consisting of *Congromuræna squaliceps* and *nasica*, *Physiculus argyropastus*, *Thyrsites bengalensis*, *Neobythites steatiticus*, *Halieutæa fumosa*, *Aphoristia trifasciata* and *Solea umbratilis*, also crustaceans and corals. Exchange. 29030.

INTERCONTINENTAL RAILWAY COMMISSION (Washington, D. C.), through Lieut. W. W. Macomb, United States Army: Butterflies, 3 spiders, and a humming-bird obtained by Dr. W. C. Shannon, U. S. Army, in Costa Rica. 28391.

INTERIOR DEPARTMENT, Hon. Hoke Smith, Secretary (U. S. Geological Survey, Hon. Charles D. Walcott, Director): Large collection of Ordovician fossils from Wisconsin and southern Minnesota, obtained by F. W. Sardeson in 1890 and 1891 (28319); 5 slabs of Upper Cambrian sandstone containing trails of *Climachtichnites Youngi*, from New Lisbon, Wis. (28320); 15 thin slides of *Stromatopora* from the Niagara terrane at Littleton, N. H. (28448); geologic Atlas of the United States, folios 1 to 8 (28748); 5 boxes containing Middle Cambrian trilobites from Mount Stephen, British Columbia, collected by W. D. Wilcox (28854); specimens of ore from Silver Cliff and Rosita (Hardscrabble) mining districts, Wet Mountain Valley, Custer County, Colo., collected by Messrs. S. F. Emmons and Whitman Cross, also illustrative specimens of fluorspar deposits from Rosiclare, southern Illinois (28866);[1] 2 specimens of barite with calcite from near Presley's, Colorado, 4 barite crystals from Apishapa Bluffs, Colorado, and 2 selenite crystals, collected by Prof. G. K. Gilbert (28877); 48 specimens of pyrophyllite, collected by H. W. Turner (28907); (through the Director and Prof. Samuel H. Scudder, Cambridge, Mass.) 74 species of fossil insects from the Older Tertiary strata of Colorado and Wyoming (28921);[2] 3 specimens of cinnabar from Mercur Mine, Mercur, Tooele County, Utah,

[1] Paper published by Mr. Emmons on the subject in Trans. Am. Inst. of Mining Engineers.

[2] Fifty-three of these species are types and have been figured in Monograph XXI, U. S. G. S. The collection contains 239 specimens.

INTERIOR DEPARTMENT—continued.
collected by J. E. Spurr (28936); collection of igneous and sedimentary rocks representing the geology of the Eureka district, Nevada, collected by Arnold Hague (29041); 2 specimens of staurolite crystals altering to white mica on chlorite schist, from near Liberty Grove, Cecil County, Md. (29120); 35 carboniferous plants from Rhode Island and 92 from Massachusetts (29183); 2 specimens of *Raphidiopsis diversipenna*, Scudder (type) from Cranston, R. I. (29258); 2,366 duplicate specimens of Middle Cambrian medusæ (29284); 28 specimens of Triassic fishes, 6 specimens of Triassic plants, and 1 specimen of Triassic insect larvæ from Massachusetts (29285); specimen of cinnabar, 2 specimens of scorodite from Mercur Mine, Mercur, Tooele County, Utah, obtained by J. E. Spurr (29291); rocks from Lower California, cerussite from Terrible Mine, Colorado, collected by S. F. Emmons, fluorite and galena from Rosiclare, Ill., obtained by S. F. Emmons, slab cut from a large spherulite from Silver Cliff, Colo., obtained by Whitman Cross (29323); 9 specimens of vesuvianite, 14 specimens of cryolite, 8 specimens of ptilolite, and 16 specimens of niter from Colorado and Wyoming, collected by Whitman Cross (29331); specimen of polybasite from "Yankee Girl" mine, Colorado, specimen of cerussite from Daisy Mine, Gunnison County, Colo., collected by S. F. Emmons (29332); 10 specimens of galena from "Minnie Moore" mine, Bellevue, Idaho, collected by J. M. Kennear, through Whitman Cross (29333); fossil fish from the Fox Hill formation, 4 miles east of Longmont Bowlder, Colorado (29335). (See under Prof. John M. Clarke.)

IOWA, State University of (Iowa City, Iowa), through Prof. C. C. Nutting: Crabs from the West Indian region. Exchange. 28618.

IRELAND, GEORGE. (See under Milton Bradley Company.)

JACKSON, SHELDON (U. S. R. M. cutter *Bear*, Alaska Division): Skin of Spermophile, *Spermophilus empetra*, from Cape Lisburne, Alaska. 28665.

JACOBS, Lieutenant, U. S. Navy. (See under Fish Commission, U. S.)

JAMES, I. E. (Pittston, Pa.), through David White: Slab containing fish plates. 29302.

JENNEY, Dr. W. P. (U. S. Geological Survey): Pitchstone from Brownsville, Lawrence County, S. Dak. (28544); fossil plants from the Lower Cretaceous of South Dakota (28861).

JENNINGS, F. (Washington, D.C.): Pitcher of Sheffield pottery with initials J. G., the last piece remaining of a table set presented to Joseph Gale, the founder of the Sheffield Infirmary. Deposit. 29406.

JENNINGS, Miss M. H. (Grand Rapids, Mich.): Larval cases of Caddis worms. 28605.

JOHANNES, J. M. (Smithsonian Institution): Grooved ax, spear-head of quartzite, and an arrow-head of white quartz (28314); snake skin (28671).

JOHNSON, A. A. (See under Wyoming, University of.)

JOHNSON, Prof. CHARLES W. (See under Wagner Free Institute.)

JOHNSON, E. J. (Torin, Sonora, Mexico): Tortoise Beetle, *Physonota unipunctata*, collected by John Sanders. 28649.

JOHNSON, J. L. (Duffield, Va.): Two hundred and twenty-eight archæological objects. Exchange. 29105.

JOHNSON, Prof. O. B. (Seattle, Wash.): Marine and fresh-water shells from Puget Sound (28492); shells (28572).

JOHNSON, W. B. K. (Allentown, Pa.): Sea-urchin, marine shells, land shells, and beans from the Isle of Pines, Cuba (28985); land shells from the same locality (29100).

JONES, Mrs. FRED. (Evanston, Wyo.), through T. W. Stanton: Fossil fish (*Diplomystus dentatus*, Cope), from the Eocene formation (Green River shales), Fossil Station, Wyoming. 28436.

JORDAN, Dr. D. S. (See under Leland Stanford Junior University).

JOUTEL, LOUIS (New York City): One hundred and seven species of Coleoptera. 28708.

JUDD, E. T. (Cando, N. Dak.): Twelve eggs (one set) of Shoveller, *Spatula clypeata*. 28326.

JUDD, S. D. (Department of Agriculture): Three species of amphipods from Newport, R. I. 29463.

JUDSON, W. B. (Pasadena, Cal.): Nest and 4 eggs of Hutton's Vireo, *Vireo Huttoni* (exchange) (28412); skin of Hutton's Vireo, *Vireo Huttoni* (gift) (28418); 3 eggs and nest of *Phainopepla*, also 5 eggs (one set) of Wren Tit and nest of White-throated Swift (gift) (28594); 10 eggs (fivs sets) and 5 nests of Phainopepla, *Phainopepla nitens* from southern California (gift) (28802); Spotted Owl, *Syrnium occidentale* (gift) (28917); through Major Bendire, Hermann's Song Sparrow, *Melospiza fasciata Hermanni*, from California (gift) (28939); 3 eggs (one set) of California Pelican from Coronado Islands, Lower California (gift) (29400).

KALBFUS, Mrs. MARY K. (See under Miss Margaret E. King.)

KAYSER, WILLIAM (Wapakoneta, Ohio): Fifty species of North American insects (28410); 39 species of insects of various orders (28453); 43 species of North American insects of various orders (28639).

KEAM, THOMAS (Keams Canyon, Ariz.): Tooth of a fossil Ray (*Ptychodus decurrens?*). 28377.

KELSEY, F. D. (See under Agriculture, Department of, and J. N. Rose.)

KENDALL, W. C. (U. S. Fish Commission), through J. E. Benedict: Eleven birds' skins, representing 8 species from Port Royal, S. C. 28400.

KENNEAR, J. M. (See under Interior Department, U. S. Geological Survey.)

KERR, MARK B. (San Francisco, Cal.): Geological specimens from Ecuador, and fossils from the same locality. 29047.

KING, GEORGE B. (Lawrence, Mass.), through L. O. Howard: Specimens of Oniscidæ and slides of the same. Exchange. 29294. (See under Agriculture, Department of.)

KING, GEORGE F. (New York City), through Robert Cameron: Specimen of titanite. 29445.

KING, Miss MARGARET E. (Pensacola, Fla.), through Mrs. Mary King Kalbfus: Officer's sash and epaulettes worn by the late Col. William King, Fourth Infantry, U. S. Army, provisional civil and military governor of West Florida under appointment from General Jackson. 29327.

KING, Miss MARGARET E.—continued.

KIRSCH, LOUIS. (See under Williamsburg Scientific Society.)

KIRSCH, P. H. (See under Fish Commission, U. S.)

KLINK, C. F. (Horton, Kans.): Specimen of *Elymus virginicus submuticus*. 28561.

KLOTZ, OTTO J. (Ottawa, Ontario, Canada): Specimen of leucite from Queen Charlotte Island. 29161.

KNIGHT, W. C. (University of Wyoming, Laramie, Wyo.): Five specimens of Entomostraca from Platte River. 28646.

KNOWLES, W. A. (U. S. National Museum): Cooper's Hawk, *Accipiter Cooperi*, in the flesh. 29371.

KNOWLTON, F. H. (U. S. Geological Survey): Twenty herbarium specimens. 29472.

KNOWLTON, W. J. (Boston, Mass.): Steatite bottle from China, specimen of chrysoprase from Tulare County, Cal., specimen of zircon (cut) weighing $20\frac{3}{16}$ carats from Ceylon, and a specimen of garnet (pear-shaped carbuncle). Purchase. 29181. "A."

KNY, RICHARD, & CO. (New York City): Series of specimens showing development of European trout (purchase) (28450); chitinous parts of beetle, development of frog and salamander (purchase) (28634); series of specimens illustrating the development of water-beetle (purchase) (29203) "A"; 11 models showing the development of the water-beetle, and 22 models showing the development of Gastrula (purchase) (29234) "A."

KOHN, GUSTAVE (New Orleans, La.), through Dr. A. K. Fisher: Young American Goldfinch, *Spinus tristis*. 28430.

KORN, S. (Unionhouse, Cal.): Two specimens of Mourning-cloak Butterfly, *Vanessa antiopa*. 28731.

KUEHLING, J. H. (Washington, D. C.): King Snake from Mount Vernon, Va. 29380.

KUNZ, GEORGE F. (New York City): Specimen of chrysocolla, from near

KUNZ, GEORGE F.—continued.
Phœnix, Ariz. (29121); 5 specimens of agate, artificially colored, from Oberstein, Bavaria (29156).

LA PLATA MUSEUM (La Plata, Argentina), through Dr. Francisco P. Moreno, director: Casts of vertebrate fossils, including skull of *Toxodon*, skull of *Trigodon*, skull and jaw of *Nesodon*, jaw of *Nesodon*, skull and jaw of *Propalaphophorus*, skull of *Dacypotherium*, femur, tibia, and fibula of *Brontornis*, skull of *Honopidium*, palatal region and deformed skull of *Astrapotherium;* also 10 pottery vessels and 41 birds' skins from South America. Exchange. 29409.

LACOE, R. D. (Pittston, Pa.): Forty-three boxes containing Paleozoic plants (29255); 3 boxes of Cretaceous and Tertiary plants (29256); 2 boxes containing Triassic fishes from New Jersey, constituting the fifth installment of the "Lacoe Collection" (29257).

LAMB, T. F. (Portland, Me.): Three hundred and fifty-one specimens of garnets from Phippsburg, Me. Purchase. 28552.

LAMBE, L. M. (See under Canada, Geological Survey of.)

LANE, H. B. (Las Cruces, N. Mex.): Thirteen reptiles from Mesilla Valley. Purchase. 29316.

LANGDALE, J. W. (Washington, D. C.): Analcite from Tyrol, heulandite from Faröe Islands, calcite on galena from England, and stilbite from Washington City. Exchange. 28503.

LANGLEY, Hon. S. P. (See under Smithsonian Institution.)

LARKIN, Mrs. J. R. (Natumnuck, R. I.): Portions of the backbone of a large shark. 28359.

LASSON, J. E. (Marquette, Mich.): Specimens of *Hæmaris axillaris* and *Cicada cunicularis*. 28439.

LAWRENCE, R. H. (Los Angeles, Cal.), through Major Bendire, U. S. Army: Six humming birds, representing 6 species, from Los Angeles and Mount Wilson. 28553.

LAY, WILLIAM (Honeoye Falls, N. Y.): Fossil nut (*Trigonocarpus?*) taken from the inside of a lump of bituminous coal, from near Reynoldsville, Pa. 29193.

L'ÉCOLE POLYTECHNIQUE (Paris, France): Bronze medal commemorating the centennial of L'École Polytechnique. Deposit. 28779. (Presented to the Smithsonian and deposited in the National Museum.)

LEHMAN, W. V. (Tremont, Pa.): Carboniferous plants, representing about 70 species (exchange) (28817); 18 arrow-heads and 4 fossil plants, shells, and 2 fossil insects (gift) (28882); 5 fossil plants and 2 fossil insects from the Carboniferous formation, also 3 spear-heads and 1 arrow-head from the Middle Fork, Clinton County, Ind. (gift) (29036).

LEIBERG, J. B. (See under Agriculture, Department of.)

LELAND STANFORD JUNIOR UNIVERSITY (Palo Alto, Cal.), through Prof. C. H. Gilbert: Crustaceans from California (exchange) (28797); fossil oysters from the vicinity of Tomales Bay (gift) (29260); collection of fishes, made at Mazatlan in 1895 by Dr. D. S. Jordan (gift) (29353).

LEMKE, Miss ELIZABETH (Berlin, Germany): Fossils, minerals, and other geological material. 29188.

LEMON, E. J. (Dallas, Tex.): Shale with banding, due to weathering. 28840.

LEMON, Dr. J. H. (New Albany, Ind.): Eight species of Lower Carboniferous fossils. 29523.

LENGSFIELD, J. I. (Greenville, Miss.): Stone spear-head found in an Indian mound near Greenville. 29010. (Presented to the Smithsonian Institution, and deposited in the National Museum.)

LEUTZE, T. W. (Washington Navy-Yard): Necklace, made of the teeth of a whale, obtained from the Fiji Islands, also 2 photographs of Fijians. Purchase. 28823.

LINCOLN, Dr. J. M. (New York City): Conch shell from the bed of the Ozama River, Santo Domingo. 28417.

LINDGREN, W. (U. S. Geological Survey): Altaite and free gold in quartz, from Providence mine, Nevada County, Cal. 29530.

LINELL, M. L. (U. S. National Museum): Snake (*Lampropeltis doliata*), from Virginia. 29254.

LITTLEJOHN, CHASE (Redwood City, Cal.): Four eggs (1 set) of Aleutian Song Sparrow, 4 eggs (1 set) of Sandwich Sparrow, 12 eggs (9 sets) of Ancient Murrelet, from the Sanak Group of Islands, Alaska (gift) (28576); 3 eggs (1 set) of Peale's Falcon, *Falco peregrinus Pealei* (deposit) (28577); 4 eggs (4 sets) of Fork-tailed Petrel, *Oceanodrama furcata*, from Sanak Islands (gift) (28645); Peale's Falcon, *Falco peregrinus Pealei* (deposit) (28715); 27 specimens of Aleutian Song Sparrow (28891) (returned).

LIVEZEY, T. E. (Coolidge, Ky.): Two specimens of *Goodyera pubescens* (Rattlesnake plantain). 28551.

LONDON, TOWN CLERK OF: Bronze medal commemorative of the visit of the Duke and Duchess of York to the city of London on the occasion of their marriage July 6, 1893. 28782. (Presented to the Smithsonian from the town clerk of London, England, and deposited in the National Museum.)

LONG, S., & SON (Hancock, Pa.): Crude ocher. 29259.

LONG ISLAND ARCHÆOLOGICAL CLUB (Brooklyn, N. Y.): Photographs of drift pebbles from the collection of Francis M. Doughty, Brooklyn. 28573.

LÖNNBERG, Dr. EINAR (Upsala, Sweden): Lemming (*Myodes schisticolor*) (28959); 12 skins and skulls of the Norwegian Lemming, *Myodes lemmus* (29245).

LOOSS, Dr. A. (Zoological Institute, Leipzig, Germany): Specimens of *Distomum heterophyes*, *Distomum hepaticum* var. *ægyptiaca*, *Distomum isoporum* (cotype), *Gastrothylax gregarius*, *Gastrodiscus ægyptiacus*, *Amphistomum conicum*, *Anchylostomum duodenale*, and *Ascaris spiculigera*. Exchange. 29242.

LORIN, T. R. (Bisbee, Ariz.): Azurite from Morenci, copper from Clifton, and azurite with malachite from Bisbee. Purchase. 29180.

LOUCKS, W. R. (Peoria, Ill.): Fifty-two eggs (12 sets) of Bronzed Grackle, *Quiscalus quiscula æneus*. 28848.

LUCAS, J. P. (Baltimore, Md.): Photograph of a fossil crab found on Gangatha Beach, Accomack County, Va. 29424.

LUGENBIEL, H. G. (U. S. National Museum): Bat, *Atalapha borealis*. 28470.

LUSCOMBE, C. R. (U. S. National Museum): Cottontail Rabbit, *Lepus sylvaticus*. 28588.

LUSK, J. A. (Guntersville, Ala.): Two fragments of pottery and 2 shells (Unio) found on the banks of the Tennessee River near Guntersville. 28667.

MCBRIDE, W. S. (Marshalltown, Iowa): Two concretions from Mandan, N. Dak. 28858.

MCCANDLESS, J. M. (Atlanta, Ga.): Three specimens of Devonian (?) phosphate rock containing specimens of *Cyclora minuta*, *Cyclora depressa*, *Crytolites inornatus*, and *Ctenodonta obliqua*. 28522.

MCCORMICK & TERRY (Columbus, Ohio): Specimen of "Terry Section Liner." 29011. (Presented to the Smithsonian Institution, and deposited in the National Museum.)

MCCORMICK, L. M. (See under Glen Island Museum.)

MCDONALD, M. A. (Shade Gap, Pa.): Eight old bullet-shaped silver Siamese coins. Purchase. 28435.

MCELROY, Mrs. C. (Washington, D. C.): Four skins and skulls of Squirrel, *Sciurus* sp., 31 birds' skins, representing 30 species from Guatemala, and 2 specimens of *Ampullaria* from the same locality. 29511.

MCELROY, K. P. (Department of Agriculture): Young Spider Monkey. 29299.

MCGEE, W J (See under Smithsonian Institution, Bureau of Ethnology.)

MCGREGOR, R. C. (Palo Alto, Cal.): Two eggs (1 set) of Western Red-tailed Hawk, *Buteo borealis calurus*, from California, 2 eggs (1 set) of Swainson's Hawk, *Buteo Swainsoni*, from Colorado. 29425.

MCHALE, B. E. (Easton, Md.): Shrimp. 28564. (See under John H. Henry.)

MCILHENNY, E. A. (Avery, La.): Eight eggs (1 set) of Louisiana Clapper Rail, 25 eggs (3 sets) of Purple Gallinule, 20 eggs (5 sets) of Brown Pelican, 4 eggs (2 sets) of Harlan's Hawk (28593) (the first and last species new to the Museum collection); Bob White from Averys Island (28637); 8 specimens of Bob White (*Colinus*) (29063).

McLAIN, ROBERT BAIRD (Ithaca, N. Y.): One hundred and ninety-one birds' eggs, representing 49 species, also 3 nests. Exchange. 28996.

McPHERSON, W. D. (South Framingham, Mass.): Infusorial earth, crude and prepared. Exchange. 29384.

McTAGGERT, J. L. (Newtown, Ky.): Mole Cricket, *Gryllotalpa borealis*, Burm. 28693.

McWILLIAM, H. B. (West Charlton, N. Y.): Sixteen leaf-shaped implements of hornstone, found *en cache* in Saratoga County (28706); 62 leaf-shaped implements (part of a cache), specimens of *Planorbis complanatus*, Say, *Planorbis bicarinatus*, Say, *Planorbis exactus*, Say (?), *Planorbis parvus*, Say (?), *Physa aucillaria*, Say (?), *Valvata tricarinata*, Say, *Linnæa disidiosa*, and *Pisidium compressum*, Prime (?), from an extinct lake (28884) (Exchange).

MACOMB, Lieut. W. W., U. S. Army. (See under Intercontinental Railway Commission.)

MACOUN, JAMES. (See under Agriculture, Department of.)

MACOUN, Prof. JOHN (Geological Survey of Canada, Ottawa, Canada), through Dr. C. Hart Merriam; snakes and a lizard, from British North America. 29343.

MAGRUDER, Mrs. E. A. (Tennallytown, D. C.): Two large majolica vases, collection of ancient Roman bronzes, glass and terra-cotta, bronze lamp and bronze stand for lamp. Deposit. 28776.

MALLORY, Hon. S. R. (House of Representatives): Two specimens of *Calappa marmorata*, from Florida. 28775.

MANCHESTER MUSEUM (Manchester, England), through William E. Hoyle: British invertebrates, representing 34 species, obtained principally from the Firth of Clyde; shells. Exchange. 28361.

MANN, Miss M. E. (Washington, D. C.): Crawfish, from Mammoth Cave, Kentucky (28483); stalactite from the same locality (28613); 3 cave crickets, *Hadenœcus subterraneus*, Scud., and a crayfish from Echo Lake, Mammoth Cave (28633).

MAPLE, Dr. J. C. (Trenton, N. J.): White Japanese Silky Bantam (28629); Silver-laced Seabright Bantam hen (28647); Black Japanese Silky Bantam, White Japanese Silky fowl, and White Polish Bantam (28677).

MAPLE, Dr. J. C.—continued.

MARSHALL, GEORGE (Laurel, Md.): Ermine, *Putorius erminea* (28341); 4 specimens of Brown Bat, *Adelonycteris fuscus* (28371, 28408, 28898, 29370); Green Snake from Laurel (29361); herbarium specimens of *Pogonia ophioglossoides*, Nutt (29487).

MARTINE, C. A., through Whitman Cross, U. S. G. S.: Specimen of polybasite from Georgetown, Colo. 29334.

MASON, Prof. O. T. (U. S. National Museum): Spider, *Misumena vatia*, Clark (28574); candle-dipping apparatus from Woodlawn, Va. (28606); part of a drilled ceremonial object from near Mount Vernon, Va. (28839). (See under F. H. Williams, and Woman's Anthropological Society.)

MATHER, FRED. (See under New York State Fishery Commission.)

MATHES, K. B. (St. Augustine, Fla.): Six birds' skins, representing 5 species. Purchase. 28857.

MATTHEWS, R. S. (U. S. National Museum): Collection of birds' tongues (29497); 159 birds' skins, representing 96 species from the United States, Mexico, and Central America (29517).

MATTHIESSON, A. H. (National City, Cal.): *Natica* sp., resembling *Natica caurena*, *Turritella*, *Nassa californiana*, Conr., belonging probably to the Pliocene or Miocene period (gift) (28923): Tertiary fossils (exchange) (29273).

MAYER, JOHN C. (Round Top, Tex.): Two arrow-heads (exchange) (28662); 3 small rude chipped implements (gift) (29001); rude implements, worked flakes, scrapers, broken spear-heads, chips, and other objects, consisting of 447 specimens (gift) (29390).

MEADE, Rear Admiral R. W., U. S. Navy: Canteen carried by John Paulding, one of the captors of Major André, through the Revolutionary war. Deposit. 29381.

MEARNS, Dr. E. A., U. S. Army (Mexican Boundary Commission, San Diego, Cal.): Collection of mammal skins and skulls, 330 birds' skins, representing 70

MEARNS, Dr. E. A.—continued.
species, from Arizona and adjacent parts of California (28431); mammal skins, 73 birds' skins from Arizona and California (28443); mammal skins, marine shells, 27 birds' skins, representing 20 species, from Arizona and California (28446); sea-urchins, barnacles, and a sponge, collection of birds' eggs from southern Arizona and Lower California, consisting of 42 specimens and representing 11 species, botanical specimens, 358 birds' skins, representing 116 species, from California, Lower California, and San Clemente Island, grooved ax and grinding stone from Arizona, also 3 grinding stones from California, land, fresh-water, and marine shells from the vicinity of the Mexican boundary, mammal skins, bats, a pair of horns, human skull and piece of a horn, rocks (28510); mammal skins, 337 birds' skins, representing 97 species from California, Lower California (28540); cocoon of Tarantula-killer, *Pepsis formosa* (28546); alcoholic and dry mollusks from the Tia Juana termination of the Mexican boundary line on the Pacific Coast, alcoholic invertebrates from the Mexican boundary, alcoholic reptiles, seaweed, alcoholic fishes collected along the United States and Mexican boundary, between Fort Yuma and the Pacific Ocean, alcoholic mammals, alcoholic specimens of *Rasahus biguttatus*, Say, from San Clemente Island, alcoholic birds (28661); 172 birds' skins from southern California, Lower California, and San Clemente Island (29197); salamanders and frog from Fort Myer, pair of antlers of moose, *Alces machlis* (29321); earthenware pipe from Mountain Spring, San Diego County, Cal. (29515).

MEEK, Prof. S. E. (Fayetteville, Ark.): Fresh-water shells from Old River, Arkansas. 28687.

MELDRUM, Mrs. W. H. (Newark, N. J.): Cecropia silk moth with cocoon. 29379.

MERCER, H. C. (Doylestown, Pa.): Three scrapers of quartzite from Bucks County. 29376.

MERRIAM, Dr. C. Hart. (See under Agriculture, Department of, and Dr. John Macoun.)

MERRILL, GEORGE P. (U. S. National Museum: Contorted schist, trap dykes, and weathered rock from Cape Elizabeth, Me. (28459); fibrolite schist, pegmatite, and mica from North Groton, and mica in gangue from Alexandria, N. H. (28598); geological material from Albemarle and Nelson Counties, Va. (28674); asbestos and associated rocks and minerals from Alberton, Md. (28761); crystalline limestone showing weathering, and pink marble from Marble Hill, Pickens County, Ga. (28942); granite, fresh and decomposed, from Stone Mountain, Ga. (28960); collection of syenite (pulaskite) and elæolite syenite from near Little Rock, Ark. (28992); asbestos in limestone from the west and lower bridge, Baltimore and Ohio Railroad, on Patapsco River, west of Alberton, Md. (29509), collected by Mr. Merrill for the National Museum. (See under C. A. Sherman.)

MEXICO, NATIONAL MUSEUM OF (City of Mexico), through Prof. A. L. Herrera: Three species of alcoholic fishes from Vera Cruz, consisting of "Percado Robo," *Joturus (pichardi?)*, "Illama," *Sicydium Plumieri* and "Cuerepo," *Menidia Humboldtiana*. 28548.

MILLER, R. T. (Fond du Lac, Minn.): Jaw of black bear and scales from the gill covers of a fish. 28591.

MILLER, W. (Grand Rapids, Mich.): Foreign postage stamps. 29216.

MILLS, G. S. (Hogansburg, N. Y.): Natural formation, resembling worked stone. 29192.

MILLS, Miss LYRA. (See under Agriculture, Department of.)

MILLS, ROBERT A. (Chuluota, Fla.): Stone ax from Orange Mound, iron saddlebow from Saddle Mound, near St. Johns River, and natural formation resembling a worked stone implement (28445); tapeworms taken from a swamp rabbit (29061); adult tapeworms from a specimen of *Lepus palustris* (29084); tapeworms from rabbits and from a specimen of *Amia* (29212).

MILNE-EDWARDS, Dr. A. (See under Paris, France. Museum of Natural History.)

MILNER, I. B. (Washington, D. C.): Collection of photographs of views taken principally in Australia and New Guinea. Deposit. 28348.

MILTON BRADLEY COMPANY (Springfield, Mass.), through George Ireland, Assistant Treasurer: Game of Chuba (an adaptation of the African game of Mancala). 29137.

MINIER, C. M. (Pomona, Cal.): Alcoholic specimen of Scorpion, *Hadrurus hirsutus*, Wood. 28778.

MITCHELL, G. E. (Winter Haven, Fla.): Snake. 28888.

MITCHELL, Hon. J. D. (Victoria, Tex.): Six specimens of Unios (28337); specimen of *Sphaerophthalma occidentalis*, L., and alcoholic specimens of *Macoma Mitchelli*, Dall, from Jackson County (28366); flint chips from a flint workshop near Goliad, Tex., (28422); 7 species of small land shells from the drift of Guadelupe River, Texas (28644); land-shells and specimens of *Venus notata* (28862); fresh-water shells (29306); specimen of *Albunea Gibbesii*, Stimpson (29447); 3 species of marine bivalve shells from Matagorda Bay, Texas. (29467).

MOHUN, R. D. L. (Department of State): Large collection of ethnological objects from the Congo region, especially the Upper Congo. Deposit. 29024.

MOLINER, G. M. (City of Mexico, Mexico), through H. W. W. Evans: Stone sculpture resembling a human figure. Deposit. 29367. (Returned.)

MONKS, Miss S. P. (Los Angeles, Cal.): Specimens of *Solariella cidaris*, A. Adams, and *Calliostoma variegata*, Carpenter, from the Pleistocene formation of San Pedro, Cal. 28912.

MONTANÉ, Dr., and Dr. CHARLES DE LA TORRE (Royal University, Havana, Cuba): Ten photographs of crania and antiquities of Cuba. 28485.

MOONNAN, L. C. (Chapard, Ariz.): Specimen of Grant's Rhinoceros Beetle, *Dynastes Grantii*. 28798.

MOONEY, JAMES. (See under Smithsonian Institution, Bureau of Ethnology.)

MOORE, C. B. (Philadelphia, Pa.): Section of a red cedar log 18 feet long, found by W. K. Moorehead at the base of Metzger Mound, near Yellow Bud, Ohio. 28589.

MOORE, F. E. (Maryville, Tenn.): Specimen of *Habenaria ciliaris* from the top of Great Smoky Mountain, Tennessee. 29019.

MOORE, H. C. (Cape Town, South Africa), through Hon. C. H. Benedict: Mammal skins and skulls collected in South and South Central Africa. 28908.

MOOREHEAD, W. K. (See under C. B. Moore.)

MOORS, H. J. (Apia, Samoa): Two Samoan canoes with paddles, and a large wooden bell, or logo. 29233.

MORENO, Dr. FRANCISCO P. (See under La Plata Museum.)

MORGAN, Hon. D. N. (See under A. W. Carey.)

MORONG, THOMAS. (See under Agriculture, Department of.)

MOSS, WILLIAM. (See under George Wild.)

MOUNT, D. A. (Jamesburg, N. J.): Pair of white Plymouth Rock fowls, pair of white Wyandotte fowls, and a white Holland turkey, in the flesh (29118); white Plymouth Rock fowl (29261).

MÜLLER, Dr. SOPHUS. (See under Royal Museum of Northern Antiquities, Copenhagen, Denmark.)

MUND, A. H. (Fairbury, Ill.): Two specimens of *Gordius* sp. 29164.

MUSEUM OF COMPARATIVE ZOOLOGY (Cambridge, Mass.): Twenty crabs, representing 7 species. Exchange. 28557.

MUSEUM OF FINE ARTS (Boston, Mass.): Three photographs of cave marble. 28631.

MUSEUM SENCKENBERGIANUM (Frankfort on the Main, Germany), through Dr. O. Boettger: Two lizards from China. Exchange. 29124.

NAILOR, WASHINGTON. (See under W. Huntington.)

NANCE, Dr. W. V. (Maybeury, W. Va.): Bowl and cup-shaped object of steatite. Deposit. 28473.

NEALLEY, G. C. (See under Agriculture, Department of.)

NELSON, E. W. (See under Agriculture, Department of.)

NEW HAMPSHIRE SCIENTIFIC SOCIETY (Amoskeag, N. H.): Five birds' nests. 28851.

NEWLON, Dr. W. S. (Oswego, Kans.): Plates resembling those of *Chlamydotherium*. 28393.

NEW YORK STATE FISHERY COMMISSION (Cold Spring Harbor, Long Island, N. Y.), through Fred. Mather, superintendent: Specimen of *Salmo fario* in the flesh. 28369.

NICARAGUA, GOVERNMENT OF, through His Excellency J. Santos Felaya, President, and also through Consul-General A. D. Straus. Collection of antiquities exhibited by the Government of Nicaragua at the Columbian Exposition in Madrid. 29404.

NICHOLS, Dr. J. B. (Soldiers' Home, Washington, D. C.): Collection of myriapods from New York, Kansas, and Washington, D. C. 28352.

NICHOLS, Mrs. W. F. (Sidney, Col.): Giant Water bug, *Belostoma americanum*, from Yampa River. 28893.

NIVEN, WILLIAM, COMPANY (New York city): Three specimens of onyx, specimen of grossularite, and specimen of xenotime from various localities. Purchase. 29503. "A."

NIVENS, W. E. (New York City): Thin slab of rosolite from Mexico. 28745.

NORRIS, A. J. (Marshall, Va.): Twenty-five birds' skins from the Peruvian Andes. Purchase. 29298.

NORTON, J. C. (Kings Mountain, N. C.): Cassiterite. 28760.

NUMISMATIC AND ANTIQUARIAN SOCIETY OF PHILADELPHIA (Philadelphia, Pa.): Fifteen specimens of continental and colonial paper money, consisting of a five Spanish dollar bill and a one Spanish dollar bill of United States, 1775; a fifty-five and a sixty-five dollar bill, 1779; thirty pence of New Jersey, 1776; three, six, and eighteen pence Pennsylvania, 1772 and 1775; six dollars of Maryland, 1767; one-third and two-thirds of a dollar, one dollar, and four dollars of Maryland, 1774; six shillings of Delaware, 1776, and a twelve-pound bill of Virginia colony. 28580.

NUTTING, Prof. C. C. (See under Iowa, State University of.)

OBER, F. A. (Washington, D. C.): Spanish sword used by the Conquistadores in Santa Domingo, sword from Puerto Rico, dated 1796, from English invasion, spur from Argentina, early Spanish spur from Santa Domingo, and a collection of early Spanish-Mexican copper and silver coins, also small serpentine celt and two terra-cotta figurines from Santa Domingo, and a small serpentine celt from the Bahamas. 29176.

OGILBY, J. DOUGLAS (Australian Museum, Sydney, N. S. W.), through Dr. Theodore Gill: Specimens of *Apogon rosecigaster*, *Aristeus fluviatilis*, and *Menidiella oxygaster*. 28610.

OLNEY, Mrs. M. P. (Spokane, Wash.): Ten species of land and fresh-water shells. 28686.

OLDROYD, T. S. (Los Angeles, Cal.): Two specimens of *Cryptodon bisectus*, Conr., from the Miocene group of California, and specimens of *Conus californicus* and *Eulima micans* from San Pedro (28336); alcoholic specimens of *Lima*, *Lazaria*, *Lucapinella*, and *Volvalina* from San Pedro Bay, brachiopod and specimen of *Actæon punctocælatus*, Cpr., with egg masses (28340); type specimen of *Lepidopleurus* (*Oldroydia*) *percrassus*, Dall (28628); 2 species of marine shells from San Pedro (28788); specimen of *Clidiophora punctata* from the same locality, and a specimen of *Laqueus californicus* from Catalina Island, Cal. (28794); 4 species of marine shells from the beach drift at San Pedro (29012).

OLDS, H. W. (Woodside, Md.): Three specimens of *Mus musculus*. 29008.

ONONDAGA, COUNTY OF (New York): Bronze medal in commemoration of the one-hundredth anniversary of the county of Onondaga. (28575.) (Presented to the Smithsonian Institution, and deposited in the National Museum.)

ORCUTT, C. R. (San Diego, Cal.): Three species of land shells from Mexico (gift) (28370); 100 amulets (purchase) (29039).

ORTH, H. A. (Washington, D. C.): Ute headdress captured in a battle at Spanish Fork, Utah. 28764.

OSBORN, Prof. H. L. (See under Hamline University.)

OSBURN, Prof. WILLIAM (Nashville, Tenn.): Insects of all orders representing 100 species (28343); 49 species of

OSBURN, Prof. WILLIAM—continued.
miscellaneous insects (28926); 17 specimens of Orthoptera (28950); 39 species of miscellaneous insects (29087).

OSTERHOUT, G. E. (See under Rose, J. N.)

OWEN, R. L. (Muscogee, Ind. T.): Glacialite, lump and pulverized, from Enid, Okla. 29217.

OWENS, C. B. (Somerset, Ky.), through W. P. Pettus: Natural formation, quartz on bituminous shale. 28752.

OWSLEY, ERNEST (Glasgow, Ky.): Crawfish and cave crickets, 8 specimens of Blind fish, *Typhlichthys subterraneus*, from Mitchell's Cave, Ky. (28449); Red Bat, *Atalapha borealis* (28506).

PACKARD, C. S. (Welaka, Fla.): Caterpillars of Cochliopod Moth (*Lagoa opercularis*). 28729.

PALMER, EDWARD: Alcoholic lizards from Acapulco, Mexico. 29433.

PALMER, JOSEPH (U. S. National Museum): White-footed Mouse, *Sitomys leucopus* (29182); 6 young Cottontail Rabbits, *Lepus sylvaticus* (29249).

PALMER, WILLIAM (U. S. National Museum): Eight skins of Hooded Warbler, *Sylvania mitrata*, showing development of plumage (gift) (28358); Red Squirrel, *Sciurus hudsonicus* (gift) (28405); 8 specimens of *Hippoboscidæ* from a horned owl (gift) (28724); Squirrel (*Sciurus hudsonicus*) (gift) (28956); Texas Jack Rabbit, *Lepus texianus* (gift) (28983); Cottontail Rabbit, *Lepus sylvaticus*, in the flesh (gift) (29250); Theraphosid spider from Lake Arbuckle, Polk County, Fla., 2 specimens of *Jordanella* and 3 specimens of *Zygonectes*, skeletons of *Sigmodon hispidus*, and *Speotyto cunicularia floridana*, Boat-tailed Grackle, *Quiscula major*, Blue Egret, *Ardea cærula*, and Louisiana Heron, *Ardea tricolor ruficollis*, reptiles and batrachians from Florida (29268);[1] 10 eggs (5 sets) of Boat-tailed Grackle, *Quiscalus major*, from the Kissimmee River, Osceola County, Fla. (29322):[1] 36 birds' skins from Florida, representing 17 species (29360);[1] lizard from Marshall Hall, Md. (29449);[1] 6 bats (*Vesperugo carolinensis*) (29454).[1] (See under P. Henry Aylett.)

PARIS, France. Museum of Natural History, through Dr. A. Milne-Edwards, director: Three crabs (*Callinectes*) and brachiopods, obtained from the results of the *Travailleur* Expedition (29131); 22 casts of vertebrate fossils, including *Anoplotherium*, *Palæotherium*, *Lophiodon*, *Hipparion*, *Helladotherium*, *Liodon*, and *Actinodon* (29163). Exchange.

PARK, Mrs. C. N. (North Topeka, Kans.): Calcareous concretions. 28334.

PARMELEE, H. P. (Cripple Creek, Colo.): Fossil wood. 28980.

PAUL, Mrs. G. R. (Norfolk Navy-Yard, Norfolk, Va.): Sword presented to Brig. Gen. G. R. Paul, of the Third Brigade, First Division, First Army Corps, June 20, 1863, by the non-commissioned officers, musicians, and privates of the Twenty-ninth Regiment New Jersey Volunteers. Deposit. 29451.

PAYN, E. J. (Olympia, Wash.): Clay (28640); silver ore from Monte Christo Mines (28931).

PAYNE, G. F. (See under Agriculture, Department of.)

PARISH, S. B. (See under Agriculture, Department of.)

PENFIELD, Prof. S. L. (Sheffield Scientific School, New Haven, Conn.): Specimen of willemite from Sedalia Copper Mine, Salida, Colo. 28582.

PENNSYLVANIA RAILROAD COMPANY (Philadelphia, Pa.): Bromide enlargement from a photograph of the "John Bull" train, and a framed legend to be attached to the photograph (gift) (28487); through T. N. Ely, chief of motive power, one of the original driving-wheels of the locomotive "John Bull," 1831 (deposit) (29510).

PENNSYLVANIA, UNIVERSITY OF (Philadelphia, Pa.), through Dr. C. W. Stiles: Parasitic worms containing Leidy's types. Deposit. 28792.

PERGANDE, T. (Department of Agriculture): Two Mexican land shells. 28726.

PETTIT, W. A. (Stouts, Ohio): Fourteen stone implements from Adams County, Ohio. 28355.

PETTUS, W. B. (See under C. B. Owens.)

PHELPS, S. S. (Elmore, Ill.): Emperor Moth, *Eacles imperialis*. 28318.

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[1] Collected for the National Museum.

PHILLIPS, A. W. (Douglas, Wyo.): Oil sand from near Douglas. 29077.

PHILLIPS, Prof. F. C. (Western University Laboratory, Allegheny, Pa.), through J. S. Diller, U. S. Geological Survey: Silver produced by reduction of the sulphide of hydrogen. 28944.

PILSBRY, H. A. (Academy of Natural Sciences, Philadelphia, Pa.): Specimens of *Bythinella æquicostata*, Pilsbry, from Lake George, Florida. 28491.

PIPER, ANNIE E. (Washington, D. C.): Jewel box shaped like a small trunk, presented by General Washington about 1777 to Mrs. Euphemia Wall. 28344.

PLAT, Rev. Mr. (See under Mrs. J. Crosby Brown.)

PLUMB, L. H. (See under Agriculture, Department of.)

POLLARD, C. L. (Department of Agriculture): Four herbarium specimens collected in the eastern section of the United States (29194); 63 herbarium specimens from the same locality (29483).

POLLARD, W. B. (Franklin Furnace, N. J.): Glacial boulder. 29505.

PONDER, T. H. (Atlanta, Ga.): Specimen of Trapdoor Spider, *Mygale Hentzii*. 29526.

PORTER, Capt. G. D. (See under Miss J. M. Cooke.)

PORTER, T. C. (See under Agriculture, Department of.)

POUTJATINE, M. le Prince PAUL (Novgorod, Russia), through Dr. Thomas Wilson: Twenty-five fragments of pottery from the Prince's estate at Novgorod, midway between St. Petersburg and Moscow, also three plaster casts representing 49 impressions of pottery from the same locality. 28477.

POWELL, Maj. J. W. (See under Smithsonian Institution, Bureau of Ethnology.)

PRICE, W. H., Jr. (Cleveland, Ohio,): Four photographic prints of a grooved ax. 28316.

PRICE, WILLIAM (Stanford University, Cal.): Skin, nest, and 4 eggs of Olive Warbler, *Dendroica olivacea*, from southern Arizona (new to science and to the Museum collection). 28765.

PRIDEMORE, A. L. (Jonesville, Va.): Beads and shells from a cave near Duffield, Scott County, Va. Deposit. 29274.

PRILL, Dr. A. G. (Sodaville, Oreg.): Eight eggs (one set) of Sooty Grouse, *Dendragapus obscurus fuliginosus*, skin of Lutescent Warbler, *Helminthophila celata lutescens*, and specimen of Oregon Vesper Sparrow, *Poocætes gramineus affinis*. 29438.

PRINGLE, C. G. (Charlotte, Vt.): Ten specimens of Mexican Umbelliferæ, representing principally new species. 29213. (See under Rose, J. N.)

RABBITT, SAMUEL (Washington, D. C.): Blue Magpie Pigeon in the flesh (29054); Blue Pigmy Pouter Pigeon in the flesh (29071).

RADER, I. A. (Bushong, Kans.): A medal, in white metal, of the Town Hall, Birmingham, England, found in the old burying ground of the Kaw Indians on Neosho River. 29200.

RAGAN, J. R. (Banyan, Fla.): Pottery vessel found buried on the bank of Indian River, Brevard County, Fla. 29229.

RAIDER, GEORGE (Cumberland, Md.), through Howard Shriver: Specimen of *Edriocrinus sacculus*, Hall, from the Oriskany sandstone terraine of Cumberland. 28807.

RAINE, WALTER (Toronto, Canada): Skin of Nelson's Sparrow, *Ammodramus c. Nelsoni*, also 2 birds' eggs. 28502.

RALPH, Dr. WILLIAM L. (Utica, N. Y.): Twenty birds' skins, representing 16 species, from various sections of the United States (28660); collection of birds' eggs, consisting of 1,224 specimens, representing 154 species and 346 sets, among which the following are new to the Museum collection, viz, Ward's Heron, Sulphur-bellied Flycatcher, Hudsonian Chickadee, Bahaman Redwing, Cuban Martin, Bicknell's Thrush, Golden-cheeked Warbler, and Arizona Woodpecker, as well as many other rare species which have heretofore been but poorly represented in the Museum collection, also 50 nests (29468); Golden-cheeked Warbler, *Dendroica chrysoparia*, from Texas (29474). (Presented to the Smithsonian Institution, and deposited in the National Museum.)

RAMBO, M. ELMER (Philadelphia, Pa.): Lead ore from near Phœnixville, Pa. 29490.

RANDOLPH, P. B. (Seattle, Wash.): Thirteen species of land shells (gift) (28846); plaster cast of a carved stone image and a pencil sketch (3 views) of a sculptured stone (exchange) (29014); land and fresh-water shells from Puget Sound (gift) (29342).

RANDOLPH, S. P. (Seattle, Wash.): Bowl of a clay pipe found on the beach at Jamestown, Va., of the earliest English pattern. 28842.

RATHBUN, Miss M. J. (U. S. National Museum): Specimens of Amphipods and marine shells from Digby, Nova Scotia. 28556.

RAUB, G. T. (Four Mile Run, Virginia): Cooper's Hawk, *Accipiter Cooperi*. 28398.

RAY, Capt. P. H., U. S. Army (Shoshone Agency, Wyo.): Quartzite scraper, flint knife, and a rude chipped implement. 29099.

REDD, Mrs. JAMES (Ridgway, Va.), through Mrs. William Redford Beale: Pipe supposed to have been smoked by the Indian chief Powhatan and John Smith, and handed down through nine generations of the descendants of Pocahontas to the present owner. Deposit. 28324. (Returned.)

REPPERT, F. (Muscatine, Iowa): Specimen and roots of *Tradescantia virginiana viilosa*. 29237. (See under Agriculture, Department of.)

RICE, B. W. (Tucker, Utah): Uintaite, gilsonite, weighing 115 pounds, from Clear Creek, Utah. 28511.

RICHARDS, W. C. (Bristol, Conn.): Beehive, snowshoe, swingle knife, and tape loom, also a pair of ox horns, and buttons made from the root of white birch tree (28831); large stone pick from Harwinton, Litchfield County, Conn. (29386.)

RICHMOND, C. W. (U. S. National Museum): Specimen of *Sitta pusilla* (nestling) (28404); Red Squirrel, *Sciurus hudsonicus* (28406); about 100 birds' tongues (28466); Barn Swallow, *Chelidon erythrogaster*, from Kensington, Md. (28567); 3 birds' skins, representing 3 species, from Mexico and Cuba (28849); 100 birds' skins, representing 28 species, from the District of Columbia, Smiths Island, Virginia, and Nicaragua (29018); 12 Trogons, principally from Borneo (29456).

RICKLEY, A. M. (Columbus, Ohio): Stone pipe with two bowls, from Rhea County, Tenn. Purchase. 29528.

RICKSECKER, A. E. (Oberlin, Ohio): Three hundred and ninety herbarium specimens. Exchange. 28870.

RIDENOUR, W. B. (Brooklyn, N. Y.): Tuber found in a potato. 29148.

RIDGWAY, ROBERT (U. S. National Museum): Three bats, *Vesperugo* sp. (collected for the National Museum) (28376); 3 young crabs, (*Callinectes hastatus*) from Point Lookout, Md. (collected for the National Museum) (28379); 56 birds' skins, representing 22 species, from Point Lookout (collected by Mr. Ridgway for the National Museum) (28385); 3 birds' skins from southern Illinois (gift) (28389); small collection of fishes from Cornfield Harbor, Chesapeake Bay, consisting of *Batrachus tau*, *Siphostoma fuscum*, *Tylosurus marinus*, *Synodus fœtens*, *Fundulus heteroclitus*, *Fundulus majalis*, *Cyprinodon variegatus*, and *Lepomis gibbosus* (collected for the National Museum) (29390); 3 eggs (1 set) of Caracara, *Polyborus cheriway*, and 3 eggs (1 set) of Ward's Heron, *Ardea Wardi*, from near Lake Kissimmee, Fla. (gift) (29195); 93 birds' skins, representing 25 species, principally from southern Florida (collected for the National Museum) (29251); specimen of Purple Martin, *Progne subis*, from Maryland (gift) (29475.) (See under Bell, James.)

ROBERTS, Dr. C. H. (New York City): Types of 3 species of *Dineutes* (gift) (29157): sixty-six North American water beetles, representing 17 species; 227 specimens of Australian Buprestidæ, representing 15 species (exchange) (29269).

ROBERTS, Master ROYAL (New York City): Five specimens of *Entimus imperialis* and *Entimus splendidus*, from South America. 29270.

ROBERTSON, G. W. (Washington, D. C.): An albino specimen of *Didelphys marsupialis*. 29104.

ROBERTSON, Miss M. B. (See under Agriculture, Department of.)

ROBINSON, B. L. (See under Agriculture Department of.)

ROBINSON, J. H. (Washington, D. C.): Spider, *Ctenus punctulatus*, Hentz. 29524.

ROBINSON, Lieut. WIRT, U. S. Army (War Department): Left astragalus of *Platygonus*, ankle bone of a peccary (28367); 7 fragments of pottery, skull of Raccoon, *Procyon lotor*, from Florida, and specimen of *Bulimus oblongus*, Muller, from Magdalena Valley, Colombia, South America (28388).

ROBLEY, Gen. J. H. (Charing Cross, London, England): Photograph of General Robley and his collection of New Zealand tattooed heads. 29520.

ROCKENSTYRE, C. E. (Albany, N. Y.): Black Cochin Bantam. 29315.

ROCKHILL, Hon. W. W. (State Department): Indian feather costume, consisting of a headdress, necklace, armlets, and apron, from Ecuador (exchange) (28609); 3-pronged tapers used by priests for excoriation (gift) (29263).

RODGERS, Mrs. J. A. (South Bethlehem, Pa.): Waistcoat said to have belonged to Gen. George Washington. Deposit. 29312.

ROGERS, THOMAS (Manchester, England): A series of specimens of a British land shell, *Chausilia bidentata*, Boettger, var. *cravenensis*, Taylor. 29346.

ROGERS, Miss VIRGIE (Luthers Store, Ala.): Specimen of *Cicada dorsata*, Say. 28596.

ROLFS, P. H. (Lake City, Fla.): Specimens of *Elaps fulvius* and *Rhineura floridana*. 29220.

ROOSEVELT, Hon. THEODORE (Civil Service Commission, Washington, D. C.): Pair of snowshoes of Norwegian type, made in Minneapolis, Minn., and a staff. 29106.

ROSE, J. N. (Department of Agriculture): Herbarium specimem of *Brickellia* from Mexico, collected by C. G. Pringle (29486); 2 specimens of Colorado Umbelliferæ, collected by Mr. George E. Osterhout (29029); 3 herbarium specimens collected by Mr. Osterhout (29075); 27 herbarium specimens from Fort Collins, Canada, collected by C. S. Crandall (29147); herbarium specimen collected by Dr. A. Davidson, of Los Angeles, Cal. (29516); 2 herbarium specimens of *Cissus* from F. D. Kelsey, of Oberlin, Ohio (29527).

ROSE, J. N.—continued.

ROTHROCK, Dr. THOMAS (Howard, Pa.): Supposed meteorite, found on the eastern border of the Alleghanies, magnetite, and other material (29113); stone chisel from Bald Eagle Valley (29214).

ROUSSEAU, Miss N. E. (Washington, D. C.), through J. E. Benedict: Iron fat lamp. 28338.

ROULET, PAUL (Springfield, Mo.): Arrowhead found in an Indian mound in Lawrence County. 28533.

ROWE, C. H. (Cliftondale, Mass.): One specimen each of *Patula striatella* from the eastern section of the United States and *Polygyra espiloca*, Ravenel, from the Southern States. 28568.

ROYAL BOTANIC GARDENS (Kew, England), through Dr. W. T. Thiselton-Dyer: Birds' bones, 111 botanical specimens from Aldabra Island, shells, and a specimen of Fruit Bat, *Pteropus aldabrensis*. 29347. (The latter sent by Dr. Abbott through the Royal Botanic Gardens.)

ROYAL MUSEUM OF NORTHERN ANTIQUITIES (Copenhagen, Denmark), through Dr. Sophus Müller: Ethnological objects from East Greenland. Exchange. 28353.

RUBIN, C. A. (Washington, D. C.): Collection of insects. 28478.

RUSSELL, FRANK (State University of Iowa, Iowa City, Iowa): Two specimens of *Asterias* from Puget Sound. 29326.

RUSSELL, HEMAN R. (Manhattan, Ill.): Hammerstone. 28563.

RUTTER, CLOUD (Long Pine, Nebr.): Skin of Merganser, *Merganser americanus*, from Wyoming. 28424.

SAFFORD, Prof. J. M. (Nashville, Tenn.): Phosphates. 28735.

SALLING, GUY (South Greenfield, Mo.): Thirty-six flint implements found on the surface of plowed fields in the Creek Valleys. Exchange. 29496.

SALMON, Dr. D. E. (See under Agriculture, Department of.)

SANDERS, JOHN. (See under E. J. Johnson.)

SANSOM, JOSEPH (St. George's Road, Portland, England): Twenty cycads. Purchase. 29501.

SARDESON, F. W. (See under Interior Department, U. S. Geological Survey.)

SARGENT, C. S. (See under Agriculture, Department of.)

SCHERRER, L. P. (Morristown, N. J.), through Maj. Charles Bendire, U. S. Army: White-throated Warbler, *Helminthophila leucobronchialis*. 28374.

SCHLÜTER, WILHELM (Halle, Germany): Six Birds of Paradise and humming birds (purchase) (29023) "A"; Tarsier, *Tarsius spectrum*, Flying Lemur or Colugo, *Galeopithecus volans* (purchase) (29035) "A"; Hamster, *Cricetus frumentarius* (purchase) (29354).

SCHMID, E. S. (Washington, D. C.): Specimen each of Toucan and Pheasant (28384); Boa constrictor in the flesh (28484); Silver Pheasant, *Euplocomus nycthemerus* (28493); 2 specimens of *Conurus pertinax* in the flesh (28721); specimen of *Amazona auropalliata* (28951); White Leghorn hen in the flesh (29244); skin and skull of *Lutra canadensis* (29248). (See under G. A. Fick.)

SCHUCHERT, CHARLES (U. S. National Museum): Twenty specimens of Trenton fossils from near Burgin, Ky. (collected by Mr. Schuchert for the National Museum) (28529); 6 specimens of Waverly fossils from Warren, Pa. (gift) (28530); 50 specimens of Chemung fossils from Hatch Run, near Warren, Pa. (gift) (28531); 2,352 specimens of Devonian fossils from Moreland, Ky. (collected for the National Museum) (28538); window glass with spherulites from a glass factory at Kane, Pa. (gift) (28600); 13 boxes of Zeuglodon material from Choctaw County, Ala. (collected for the National Museum) (28859); 2 boxes of Eocene invertebrates from Choctaw County, Ala. (collected for the National Museum) (28860); numerous fish bones and shark's teeth, from Cocoa, Ala. (collected for the National Museum) (29086).

SCHUTZ, Dr. J. R. (Washington, D. C.): Large fungus from Plymouth, Pa. 29489.

SCIDMORE, Miss E. R. (Washington D. C.): Harpoon head with serpentine (jade?) blade, from Alaska. 29000.

SCOTT, A. W. (San Antonio, Tex.): Cocoons of *Thyridopteryx ephemæformis*. 28419.

SCOTT, A. W. (Clay City, Ky.): Skull of fossil Elasmobranch from the eastern part of Powell County, Ky. Purchase. 28652.

SCOTT, Lieut. J. H. (U. S. R. M. Cutter *Forward*, Mobile, Ala.): Click beetle, *Alaus myops*. 29513.

SCOTT, Mrs. J. JACKSON (Eckington, D. C.): Sword and epaulets worn by Capt. Seth Brett Thornton, Second Dragoons, U. S. Army, when killed, August 18, 1847, during the Mexican war. Deposit. 28685.[1]

SCOVELL, J. T. (Terre Haute, Ind.). Types of 4 new species of fishes collected in Mexico by A. J. Woolman, consisting of *Notropis aztecus*, n. sp., *Gambusia infans*, n. sp., *Evarra Eigenmanni*, n. sp., and *Chirostoma Jordani*, n. sp. 28650.

SCUDDER, L. T. (Linden, Md.): Two fresh specimens of *Peromyscus leucopus*. 28719.

SCUDDER, N. P. (U. S. National Museum): Red Squirrel, *Sciurus hudsonicus*. 28786.

SCUDDER, Prof. SAMUEL H. (See under Interior Department, U. S. Geological Survey.)

SEMPERS, J. F. (Aiken, Md.): Six birds' skins, representing 6 species, and 6 mounted specimens, representing the same number of species, from Maryland. 28549.

SHANK, R. M. (Bluff City, Tenn.): Caterpillar of Regal Walnut Moth, *Citheronia regalis*. 28481.

SHANNON, Dr. W. C., U. S. Army. (See under Intercontinental Railway Commission.)

SHATTUCK, C. B. (See under Agriculture, Department of.)

SHAVER, H. (Augusta, Ga.): Eleven arrow-heads from Richmond County,

[1] Captain Thornton struck the first blow at Caracita in the war with Mexico, and fell at Contreras in the last attack upon the City of Mexico.

SHAVER, H.—continued.
Ga., 8 arrow-heads from Columbia County, and 8 arrow-heads from Sweet Water, Edgefield County, S. C. Exchange. 28518.

SHEPARD, Miss IDA M. (Long Beach, Cal.): Five species of marine shells (28541); specimens of *Macoma*, *Stylopsis*, and *Barlecia* from San Pedro, Cal. (28787); shells and brachiopods from the same locality (28911); shells (29341).

SHERMAN, C. A. (Manville, Wyo.): Seventy-nine scrapers and quarry material (29002); through G. P. Merrill, opalized wood, fossils (29266); fossil mammal bones (29369).

SHINDLER, A. Z. (U. S. National Museum): Grooved ax from Laurel, Md. 28512.

SHORT, J. W. (See under Agriculture, Department of.)

SHRIVER, HOWARD (Cumberland, Md.): Two specimens of *Pleurotomaria itys*, Hall; 3 specimens of *Nuculites* cfr. *triqueter*, Conrad; 1 specimen of *Nucula Randalli*, Hall; 1 specimen of *Nucula* cfr. *niotica*, Hall, and 2 specimens of *Nucula* sp. undet. 28806. (See under George Raider.)

SHUFELDT, Dr. R. W. and J. H. CHAPMAN (Takoma, D. C.): Skin of half-grown male Sewellel, *Haplodon rufus*, collected in 1894 at Mishawaka, Oreg. 28368.

SIAM, KING OF (Bangkok), through His Royal Highness Prince Devawongse Varaprakar, Minister for Foreign Affairs, Bangkok, and Mr. Isaac Townsend Smith, Consul-General of Siam: Siamese edition of the "Tripitaka," the sacred writings of the Southern Buddhists. 29415.

SICKLES, Miss EMMA (Chicago, Ill.): Workbag of "Lizzie Black Fox," wife of "Wounded Knee," a Sioux Indian. 29144.

SILVESTRI, FELIPPO (Museo Civico di Storia Naturale, Genoa, Italy): Thirty-six species of European myriapods. Exchange. 29032.

SIMONDS, ALLIE (Arkansas Industrial University, Fayetteville, Ark.): Three butterflies, viz: *Anæa andria*, Scud., *Catopsilia eubele*, L., and *Nisoniades juvenalis*, Fab. 28730. (Returned.)

SINGLEY, Prof. J. A. (Giddings, Tex.): Specimens of *Holospira* from El Paso County, Tex. 28905.

SMILLIE, T. W. (U. S. National Museum): Twelve photographs of Hindoos taken by N. D. Poopal, Ahmednuggur, India. 28624.

SMITH, Mrs. C. B. (Washington, D. C.): Guirro (rattle) from Puerto Rico, and a Tiple (treble guitar) from the same locality. Deposit. 29411.

SMITH, F. M. (San Francisco, Cal.): Borax and photographs of works of the Pacific Coast Borax Company. 28426.

SMITH, GEORGE D. (New York City): Kazoo. 28585.

SMITH, HARLAN I. (Saginaw, Mich.): Twenty-eight crayfishes from the shore of the Saginaw River (28380); sponges and bryozoans from the Shiawassee River (28402); dried sponges and bryozoans growing on wood, from the mouth of the Shiawassee River (28558); isopods (28586); 2 glaciated pebbles from Beaver Creek, Saginaw County (28844); specimen of Murre, *Uria lomvia*, in the flesh, from Lake Ontario (28654).

SMITH, ISAAC TOWNSEND. (See under Siam, King of.)

SMITH, Prof. J. B. (New Brunswick, N. J.): Types of 35 species of American Noctuidæ (gift) (28535); type specimens of 13 species of Noctuidæ (exchange) (28833); currant branches infested with specimens of Flat-headed Borer, *Agrilus sinuatus* (gift) (29196). (See under Bruce, David.)

SMITH, JOHN DONNELL. (See under Agriculture, Department of.)

SMITH, W. S. TANGIER (Stockton, Cal.): Bat and lizards. 28416.

SMITHSONIAN INSTITUTION, Mr. S. P. Langley, Secretary.

BELL, J. J., Brooksville, Hernando County, Fla. 28879.

CHAMBERLAIN, Dr. L. T., The Chelsea, New York City. 28441, 28447, 28486, 29102, 29123, 29159, 29345.

COHEN, Rev. HENRY, Galveston, Tex. 28698.

FRY, Mr. WILLIAM E., Rondubusch, near Cape Town, South Africa. 28604.

GUNNING, Mrs. MARY, Boston, Mass. 28581.

HEATHCOTE, Mr. W. H., Preston, Lancashire, England. 28929.

SMITHSONIAN INSTITUTION—continued.

L'ÉCOLE POLYTECHNIQUE, Paris, France. 28779.

LENGSFIELD, J. I., Greenville, Miss. 29010.

LONDON, TOWN CLERK OF. 28782.

MCCORMICK and TERRY, Messrs., Columbus, Ohio. 29011.

ONONDAGA, COUNTY OF, New York. 28575.

RALPH, Dr. WILLIAM L., Utica, N. Y. 28660, 29468, 29474.

VIGNAUD, HENRY (Paris, France): Model of the Behaim globe, the original of which was made at Nuremburg in 1487. 28811.[1]

VOGLESON, J. A., Los Angeles, Cal. 28930.

WILCOX, Dr. TIMOTHY E., U. S. Army, Fort Huachuca, Ariz. 29393.

WILLIAMSBURGH SCIENTIFIC SOCIETY, through Mr. Louis Kirsch, president. 29122.

WOLLAM, HAROLD, Rising Sun, Ohio. 28700.

Transmitted from the Bureau of Ethnology, Maj. J. W. Powell, Director:

Small doll obtained by C. C. Willoughby from the Abnaki Indians of Maine (28325); 2 Navajo rings in process of manufacture and a cup-and-ball game made from deer bones, collected by James Mooney (28527); taculli net made from willow bark, collected by W J McGee (28528); stone ornament, probably a pendant, worn by the Indians as a charm, found near an old camp at Witch Creek, Cal., by H. W. Henshaw (28603); 4 ethnographic objects obtained from the Kiowa, Cherokee, and Arapahoe Indians by James Mooney (28789); mescal drum, pair of leggings, headdress of a dog soldier, model of a cradle, obtained from the Kiowa Indians by James Mooney; head ornament of a Cherokee ball player, and head ornament of sacred crow feathers belonging to an Arapahoe Indian (28841); ethnological objects obtained from the Papago and Seri Indians of southern Arizona and northeastern Mexico (29025); 260 specimens of Algæ (29236); bow and arrows, drum, maul, plow, and flutes from Arizona (29280).

Transmitted from the National Zoological Park, Dr. Frank Baker, Superintendent:

Fremont's Squirrel (*Sciurus Fremonti*) (28329); Weasel (*Putorius* sp.) (28350); Monkey (*Cercopithecus engythithea*) (28401); Banded Rattlesnake (*Crotalus horridus*) (28413); 2 specimens of Virginia Deer (*Cariacus virginianus*) and a Muskrat (*Fiber zibethicus*) (28497); Squirrel (*Sciurus*, sp.) and Raccoon (*Procyon lotor*) (28542); Opossum and 2 Foxes (28583); Fish Hawk (*Pandion haliætus*) and Red-shouldered Hawk (*Bueto lineatus*) (28680); Coypu (*Myopotamus coypu*) (28681); Snake (*Pituophis melanoleucus*) (28716); Muskrat (*Fiber zibethicus*) (28725); specimen of *Macropus rufus* (28736); Parrot (*Amazona auropalliata*) in the flesh (28743); Marmoset (*Hapale jacchus*) (28871); Cockatoo (*Cacatua galerita*) (28872); 3 Nine-banded Armadillos (*Tatusia novemcincta*), Marmoset (*Hapale œdipus*), and a Coyote (*Canis latrans*) (28873); Beaver (*Castor canadensis*), Virginia Deer (*Cariacus virginianus*), and Bengal Monkey, *Macacus rhesus* (28808); specimen of *Heloderma suspectum* from Old Gila Bend, Arizona, and specimen of *Thalassochelys caouna* from Lynn Haven Bay, Virginia (28812); Green Monkey, *Cercopithecus sabæus* and Agouti, *Dasyprocta aguti* (28943); Virginia Deer (*Cariacus virginianus*) (28962); skeleton of *Crotalus horridus* (28997); Gray Fox, *Urocyon virginianus*, Squirrel (*Sciurus aureigaster*) (28998); Gray Fox, *Urocyon virginianus* and Coati, *Nasua rufa* (29065); Rattlesnake (*Crotalus confluentus*) and Yellow Rattlesnake, *Crotalus horridus* (29066); Copperhead snake, *Ancistrodon contortrix*, Blue Heron, *Ardæ herodias* and Elk (*Cervus canadensis*) in the flesh

[1] This globe was acquired through the courtesy of Mr. Henry Vignaud, Paris, France, who, in behalf of the Smithsonian Institution, supervised its construction and attended to the purchase of the model.

SMITHSONIAN INSTITUTION—continued.
(29067); Parrot (*Amazona*, sp.) in the flesh (29150); Scarlet Ibis, *Guara rubra* and a Rattlesnake (*Crotalus confluentus*) in the flesh (29151); Cinnamon Bear, *Ursus americanus*, Peccary (*Dicotyles tajacu*), and 2 Bisons (*Bison americanus*) (29152); 2 Antelopes (*Gazella dorcas*), male and female (29179); 2 Geese (*Anser cygnoides*) in the flesh (29205); Macaque, *Macacus cynomolgus* (29206); Curassow (*Crax*) (29264); Mole (*Scalops aquaticus*) (29271); Cassowary (*Casuarius galeatus*) in the flesh (29275); Rattlesnake (*Crotalus confluentus*) in the flesh (29276); Sandhill Crane, *Grus mexicana* in the flesh (29277); Spider Monkey, *Ateles*, sp. and Red Lynx, *Lynx rufus* (29278); Paca (*Coelogenys paca*) (29358); Curassow (*Crax*, sp.) (29362); Diana Monkey, *Cercopithecus diana* (29462); Black-crowned Night Heron, *Nycticorax nycticorax navius* in the flesh (29461); Bald Eagle, *Haliaëtus leucocephalus* in the flesh (29465).

SMOLINSKI, JOSEPH (Washington, D. C.): Two Polish military decorations with accompanying certificates, also passports and miscellaneous papers of the late Joseph Smolinski, commander of the Imperial Ottoman Order of the Medjidieh, Chevalier of the Polish Military Cross, "Military Vertuti." 28714.

SMYTH, Prof. E. A., jr. (Virginia Agricultural and Mechanical College, Blacksburg, Va.): Two species of East Indian butterflies, new to the Museum collection. 28777.

SNIDER, G. L. (Smithsonian Institution): Specimen of *Scalops aquaticus*. 29478.

SNYDER, Rev. D. W. (Luobo, West Africa): Pair of Goliath Beetles, *Goliathis giganteus*, Lamarck. 28800.

SÖRENSEN, Rev. P. H. (Egedesminde, Greenland): Twenty bird skins (representing 15 species) from Greenland. 28432.

SORNBORGER, J. D. (Cambridge, Mass.): Two eggs of Labrador Jay, *Perisoreus canadensis nigricapillus* and 3 eggs of Horned Lark, *Otocoris alpestris*. Deposit. 28915.

SORRELS, C. M. (U. S. National Museum): Old nest of Ruby-throated Hummingbird, from Prince George County, Md. 28738.

SOWERBY, G. B. (London, England): Three specimens of *Mactra*, from Kurrachee, India. 28948.

SPICER, Capt. JOHN (Groton, Conn.): Summer lamp of stone, with wick, and pyrites strike-a-light with tinder, obtained from the Eskimos of Cumberland Gulf. 28480.

SPRAGUE, J. C. (New York City): Nest of House Wren, *Troglodytes ædon* from Tarrytown, N. Y. 28751.

SPURR, J. E. (See under Interior Department, U. S. Geological Survey.)

STABLER, H. B. (Sandy Spring, Md.): Cooper's Hawk, *Accipiter Cooperi* in the flesh. 28816.

STANTON, T. W. (U. S. Geological Survey): Gypsum pseudomorph after shell (*Lucina*) from near New Idria, Cal. (28783); 2 species of Unios from the Upper Missouri River (28832). (See under Mrs. Fred. Jones.)

STARIN, J. H. (New York City): Twelve American Flamingoes, *Phœnicopterus ruber* from the Bahamas. Exchange. 28587.

STEARNS, FREDERICK (Detroit, Mich.): Twenty-one lots of crustaceans and echinoderms from Japan, Hawaiian Islands, and Loo Choo Islands; also 3 specimens of *Acanthochites setiferus*, Nutt, from Hawaii. Exchange. 28734.

STEFANESETTI, G.: Cast of tooth of *Dinotherium gigantissimum*. 28438.

STEINER, Dr. R. (Waynesboro, Ga.): Leaves of *Sarracenia variolaris* (gift) (28437); collection of aboriginal relics from the Etowah Mounds (deposit) (28826); 67 arrow-heads and other objects from Columbia County, Ga. (deposit) (29048); 63 arrow-heads and 2 worked flakes found *en cache* in North Augusta on the South Carolina side of the Savannah River, and a flint scraper from Columbia County, Ga. (deposit) (29338).

STEJNEGER, Dr. LEONHARD (U. S. National Museum): Two Flying Squirrels, *Sciuropterus volucella*, from Laurel, Md. (gift) (28399); mammal skins and skulls from South Dakota (collected for

STEJNEGER, Dr. LEONHARD—continued. the National Museum) (28507); skins and skulls from the same locality (collected for the National Museum)(28555); 2 birds' skins, representing 2 species, from South Dakota (collected for the National Museum) (28560); Sharp-shinned Hawk, *Accipiter velox*, from South Dakota (collected for the National Museum) (28617); reptiles, and 3 bats (collected for the National Museum) (28658); 4 beetles, specimens of Myrmeleon, a grasshopper, and a spider from Bad Lands, South Dakota; also a leech, slug, specimen of *Pupa armifera*, from Bad Lands, Pine Ridge Agency, S. Dak. (collected for the National Museum) (28896).

STEPHENS, F. (Witch Creek, Cal.): Specimen of *Eutænia*, sp., from California. 29531.

STEPHENS, JOHN (Franklin Furnace, N. J.): Slickensides. 29506.

STERKI, Dr. V. (New Philadelphia, Ohio.): Alcoholic specimen of *Margaritana dehiscens* (28508); types of two new species of *Pisidium* from Ohio (28651); three species of Unionidæ from Portage County, Ohio (28727); four species of Corbiculidæ from the same locality (28853).

STERN, S. A. (Philadelphia, Pa.): Three double whistles and 2 flutes. 29101.

STERNBERG, C. H. (Lawrence, Kans.): Slab containing numerous specimens of *Uintacrinus socialis* (purchase) (28856); slab of *Uintacrinus socialis* (gift) (28899).

STEVENS, Mrs. ALICE. (See under Agriculture, Department of.)

STEVENS, WILLIAM (Fredericksburg, Va.): Four specimens of *Procyon lotor*. Purchase. 28498.

STEVENSON, S. (La Barge, Wyo.): Plants. 28491.

STILES, Dr. C. W. (Department of Agriculture): Parasites consisting of type specimen of *Coccidium bigeminum*, Stiles, 1891; cotype of *Coccidium truncatum*, Railliet and Lucet, 1891; cotype of *Distomum albidum*, M. Braun, 1893; type of *Moniezia denticulata* (Rud., 1810) R. Bl., 1891, Balsam preparation; type of *Moniezia Benedeni* (Moniez. 1879), R. Bl., 1891, and type of *Dispharagus gasterostei*, Stiles 1891. 28753. (See under Pennsylvania, University of.)

STOCKDALE, T. P. (Belle Vernon, Pa.): Three fragments of pottery, 3 arrow-heads, 2 tops of old buttons, piece of a bronze ornament, piece of a mammal bone, and fragment of a mammal tooth. 28607.

STOFIEL, W. W. (Stofiel, Nev.): Five arrow-heads, 3 fragments of pottery and minerals. 29207.

STONE, WITMER. (See under Academy of Natural Sciences.)

STOSSICH, M. (Trieste, Austria): Parasites comprising specimens of *Monostomum orbiculare*, Rud., *Apoblema rufoviride* (Rud.), *Distomum carnosum*, Rud., 1819, *Distomum depressum*, Stossich, 1883 (cotype), *Bothriocephalus labracis*, Diesing, *Calliobothrium coronatum* (Rud.), and *Calliobothrium verticillatum* (28754); *Apoblema rufoviride* (Rud., 1819), *Apoblema excisum* (Rud., 1819), *Distomum soccus*, Molin, 1858, *Podocotyle fractum* (Rud., 1819), *Echinostomum croaticum*, Stossich, 1889, and *Echinorhynchus pristis*, Westr. (28755). Exchange.

STRATTON, S. R. (New York City): Pileated Woodpecker, *Ceophlœus pileatus* in the flesh, from Strattonville, Pa. 28843.

STRAUS, Hon. A. D. (See under Nicaragua, Government of.)

STRINGER, Dr. S. (See under J. J. Bell).

STRONG, Mrs. L. G. (Colchester, Conn.): Model of a tape loom in working order, with a description of the same. 28830.

SUKSDORF, W. S. (White Salmon, Wash.): One hundred and nineteen herbarium specimens. Purchase. 29519.

SULLIVAN, G. N. (Washington, D. C.): Crow (*Corvus americanus*) in the flesh. 28991.

SURBER, THAD. (White Sulphur Springs, W. Va.). Five eggs (1 set) of Ovenbird, 3 eggs (1 set) of Cardinal, 5 eggs (1 set) of Blue Jay, 5 eggs (1 set) of White-rumped Shrike, and 3 eggs (1 set) of Screech Owl from Vernon County, Mo., 4 eggs (1 set) of Field Sparrow, and 9 eggs (2 sets) of Green Heron from White Sulphur Springs; 6 arrow-heads from Greenbrier County, skeleton of Bald Eagle, and skeleton of a 4-legged chicken. 28722.

SUSSEX, A. E. (Orange City, Fla.): Snake. 29440.

SWEELEY, WILLIAM (Williamsport, Pa.): Souvenir badge of the Twenty-ninth Annual Encampment of the Department of Pennsylvania, G. A. R., at Williamsport. 29247.

SWEET, Dr. WILLIAM (Shelbyville, Ill.): Six stone hatchets and 6 flint arrowheads from Ontario, Canada. Exchange. 29031.

SWINGLE, W. T. (Eustis, Fla.). (See under H. J. Webber.)

TANNER, J. J. (St. John, Utah): Graphite, ocher, and marl. 29095.

TASSIN, WIRT (U. S. National Museum): Two hundred zeolites from Minas Basin, Nova Scotia, and vicinity (collected for the National Museum) (28458); specimen of epidote in calcite on granite from Washington, D. C. (gift) (28505); phosphate from Roseland, Nelson County, Va. (collected for the National Museum) (28961).

TAYLOR, R. (Four Mile Run, Virginia): Seven specimens of Black Tern, *Hydrochelidon nigra surinamensis*, in the flesh. 28495.

TAYLOR, T. O. (Manassas, Va.): Piece of slate containing tracery of a fern, found in a quarry near Manassas. 28954.

TEUTE, FERD. (Rochester, N.Y.): Twenty-five species of Lepidoptera. 28709.

THAYER, A. H. (Scarboro, N. Y.): Brewster's Warbler, *Helminthophila leucobronchialis*, from Beltville, Md. Exchange. 29339.

THE OLD BANGOR SLATE COMPANY (Bangor, Pa.): Ground slate and bricks made from the same material. 28599.

THISELTON-DYER, Dr. W. T. (See under Royal Botanic Gardens, Kew, England.)

THOMAS, E. N. (Union City, Pa.): Luna Silk Moth, *Actias luna*. 29383.

THOMPSON, R. J. (U. S. National Museum): Snake (*Cyclophis æstivus*), Spider (*Dolomedes tenebrosus*, Hentz), and a small collection of mammals. 28584.

THOMSON, ALBERT (Folsom, S. Dak.): A small collection of mammal skins and 2 birds' skins from South Dakota. 29215.

TIFFANY & CO. (New York City): Three cut and polished prehinites from Hoxie's Quarry, New Jersey. 29290. Purchase. "A."

TILDEN, JOSEPH E. (See under Agriculture, Department of.)

TODD, E. R. (Smithsonian Institution): Specimen of *Peromyscus leucopus*. 29479.

TORONTO, UNIVERSITY OF (Toronto, Canada), through Prof. R. Ramsay Wright: Specimens of *Echinorhynchus capitatus*. Exchange. 29062.

TORRE, DE LA, Dr. CHARLES, and Dr. MONTANÉ (Royal University, Habana, Cuba): Ten photographs of crania and antiquities of Cuba. 29485.

TORRE, Dr. CARLOS DE LA (Royal University, Habana, Cuba): Quartz from Guanabacoa, Cuba. 28562.

TOUMEY, Prof. J. W. (Tucson, Ariz.): Eleven cones. Exchange. 28869.

TOWNSEND, CHARLES H. (U. S. Fish Commission): Four skulls of bears, collected near Sitka, Alaska (29109); septarian nodule from Alleghany River, near Tarentum, Pa. (29155); 21 birds' skins, representing 7 species, from Alaska (29178). (See under Fish Commission, U. S.)

TOWNSEND, Dr. J. A. (Newport, Oreg.): Plants. 29514.

TRACY, S. M. (See under Agriculture, Department of.)

TREGEAR, Prof. EDWARD (Wellington, New Zealand): Five photographs of Maori houses. Exchange. 29279.

TRELEASE, Prof. WILLIAM (Fayal, Azores, and also Director Missouri Botanical Garden, St. Louis, Mo.): Crustaceans and echinoderms, alcoholic fishes, and Squid from Fayal, Azores (28479); reptiles, birds, shells, and alcoholic Squid, alcoholic crabs, isopods and sea urchins, fishes, and a bat from the Azores (28521); insects, barnacles, and a shrimp from the Azores (29093).

TRENCHARD, EDWARD (New York City): Sword and belt presented to Admiral S. D. Trenchard by the Government of Great Britain for generous and effective service in rescuing the officers and crew of the British bark *Adieu*, disabled off Cape Ann, Massachusetts, in August, 1856. 29096.

TRISTÁN, Señor J. FID. (See under Costa Rica, National Museum of.)

TRUE, F. W. (U. S. National Museum): Skins, alcoholic specimens, and embryos of Meadow Mouse from Hancock County, Me. (collected for the National Museum) (28723); snake from Maine (collected for National Museum) (28728); 2 holothurians, hermit crab, and specimen of *Muræoides gunnellus* from Haven, Me. (collected for National Museum) (28741); Cottontail Rabbit, *Lepus sylvaticus* (gift) (28785); stone and bone implements, fragments of pottery, bones of animals, birds and fishes, shells, and other specimens from Haven, Kanes Point, and Naskeag, Me. (collected for National Museum) (29020); bones, teeth, and other specimens from shell heaps on Lower Torry Island, Brooklyn, Me., a pointed wooden implement from Chattos Island, Maine, and bones of an otter from a shell heap near Haven (collected for National Museum) (29375).

TURNER, H. W. (U. S. Geological Survey): Gold ore from Fall River gold quartz mine, Butte County, Cal., also specimen of rock from same locality (28475); gold crystal from near Hornitas, Mariposa County (28876). (See under Interior Department, U. S. Geological Survey).

TURNER, L. M. (Seattle, Wash.): Skin nest, and 2 eggs of Rusty Song Sparrow, *Melospiza fasciata guttata* (29427); 62 birds' skins, representing 15 species, from Washington (28952).

TURNER, W. P. (Kobé, Japan): Piece of rare Japanese money used in the feudal times (28349); 2 photographs of Japanese armor (28922).

UDDEN, Prof. J. A. (Rock Island, Ill.): Specimen of *Sphenodiscus* sp., from the Cretaceous of McPherson County, Kans. 29435.

VAN EPPS, P. M. (Glenville, N. Y.): Three leaf-shaped implements, portion of a cache of 120, and ashes from place where they were found. 28523.

VAN HISE, Prof. C. R. (Madison, Wis.): Eight specimens of ferruginous chert from Michigan. Exchange. 29211.

VAN MATER, J. A., (Franklin Furnace, Sussex County, N. J.): Slickensides. 29507.

VAN ROON, G. (Rotterdam, Holland): Thirteen specimens of Coleoptera from India, and 51 specimens of Coleoptera from Europe. Exchange. 29420.

VARAPRAKAR, His Royal Highness Prince DEVAWONGSE. (See under Siam, King of.)

VAUGHAN, T. WAYLAND (U. S. Geological Survey): Collection of young specimens of species of *Unio* and *Anodon*, principally obtained in Texas. 28940.

VECCHJ, Gen. A DE (Baltimore, Md.): Complete uniform and sword of "Swiss Guard," also a halberd from Rome, Italy. Purchase. 28635.

VELIE, Dr. J. W. (St. Joseph, Mich.): Shells and 2 specimens of calcareous incrustations. 28710.

VERY, C. F. (New Albany, Ky.): Specimen of *Verbascum phlomoides*. 29129.

VIDRINE, E. E. (Ville Platte, La.): Root of a plant supposed to be an antidote for the bite of a snake. 29295.

VIENNA, AUSTRIA. Museum of Natural History, through Dr. Aristides Brezina, director. One hundred plants. Exchange. 28850.

VIGNAUD, HENRY (Paris, France): (See under Smithsonian Institution).

VOGLESON, J. A. (Los Angeles, Cal.), through A. P. Davis: A block of wood cut from a tree which was marked as a bearing tree in a survey made in 1862. 28930. (Presented to the Smithsonian Institution, and deposited in the National Museum.)

VON IHERING, Dr. H. (Museu Paulista, San Paulo, Brazil): Marine fossils from the Pampean formation, La Plata, Argentina (gift) (29005); Unionidæ, from South and Central America (exchange) (28595).

VOORHIS, H. G. (Mount Vernon, Mo.): Four photographic views of an ancient Spanish fort in Lawrence County. 29480.

WAGHORNE, Rev. A. C. (See under Agriculture, Department of.)

WAGNER FREE INSTITUTE (Philadelphia, Pa.): Fossil Unionidæ (28571); through Prof. Charles W. Johnson, specimen of *Ichthyosaurus* (29034). Exchange.

WALCOTT, Hon. CHARLES D. (Director, U. S. Geological Survey): Seven fossil

WALCOTT, Hon. CHARLES D.—continued.
sponges comprising 1 specimen of *Dictyophytra (?) Walcotii*, Rauff, 1 specimen of *Cyathophycus reticulatus*, Walcott, and 5 specimens of *Teganium subsphaericum* (Walcott). 28383.[1] (See under R. A. Blair, Dr. George H. Chance, and Interior Department, U. S. Geological Survey.)

WALKER, BRYANT (Detroit, Mich.): Five species of Unionidæ. 28947.

WALKER, CHARLES (Belton, Tex.): Specimen of Echinoid, *Epiaster Whitei*, Clarke, from the Washita formation of the Cretaceous system. 28394.

WALLACE, W. D. (Concord, N. H.): Six specimens of *Xenoglossa pruinosa*. 28392.

WALLINGSFORD, W. W. (U. S. National Museum): Ten wood engravings from "Once a Week" (28737); double-headed turtle from Maryland (29094).

WANEN, H. M. (Luray, Va.): *Pteronarcys nobilis*, Hagen. 29364.

WARD, Dr. H. B. (University of Nebraska, Lincoln, Nebr.): Parasites comprising cotype of *Distoma opacum*, Ward, 1894, from *Amia calva*, L., and the same from *Ictalurus punctatus* (Raf.), obtained from New Baltimore, on Lake St. Clair (28756); specimens of *Distomum felineum*, Rivolta, 1885 (29083). Exchange.

WARD, Prof. LESTER F. (U. S. Geological Survey): Herbarium specimen of *Trachelospermum difforme*, Gray, from North Carolina. 29512.

WARD'S NATURAL SCIENCE ESTABLISHMENT (Rochester, N. Y.): Twenty-five birds' skins, representing 21 species, from Borneo (purchase) (28550); Hutia Rat, *Capromys brevicauda*, reported to be from Brazil (purchase) (28619); 7 hummingbirds, representing 6 species, from Colombia (gift) (28769); specimen of *Schistes albogularis*, specimen of *Urosticte ruficrissa* from Colombia (gift) (28770); Auzoux models illustrating the development of the fowl (purchase) (28790) "A"; 7 meteorites from various localities (purchase) (28935) "A"; series of 23 embryological models (purchase) (29042) "A"; casts of fossils consisting of a skull of *Ichthyosaurus platyodon*,

WARD'S NATURAL SCIENCE ESTABLISHMENT—continued.
skull of *Elephas ganesa*, skeletons of *Plesiosaurus dolichoderius*, *Plesiosaurus macrocephalus*, *Ammonites peramplus*, and *Ammonites gigas* (purchase) (29114); skeletons of Jerboa, Flying Phalanger, Marabou Stork, and King Penguin (purchase) (29441) "A"; 8 casts of fossils and cast of Sowerby's Whale (exchange) (29495).

WARING, W. G. (through Dr. W. F. Hillebrand, U. S. Geological Survey): Specimen of vanadinite with anglesite and wulfenite from Collin's Mine, Mammoth, Pinal County, Ariz. 29534.

WATERS, C. E. (See under Agriculture, Department of.)

WATTERSON, R. I., and CARPENTER, M. M. (Kings Mountain, N. C.): Specimen of cassiterite. 28875.

WAUGH, F. A. (See under Agriculture, Department of.)

WEBB, Miss CARRIE (Branchtown, Pa.): Specimen of *Trigonocarpus*, probably the fruit of *Cordaites*. 28597.

WEBB, W. F. (Albion, N. Y.): One hundred and sixty-two birds' skins, representing 40 species, obtained principally from near Brownsville, Tex. (purchase) (28566); specimen of Plain Titmouse, *Parus inornatus* from California (gift) (28642); 12 birds' skins, representing 7 species, from eastern Mexico (purchase) (28771); 2 squirrels, *Sciurus tephrogaster* from Mexico (purchase) (28774); specimen of Coppery-tailed Trogon, *Trogon ambiguus* from Alta Mira, Mexico (gift) (28784); Oriole, *Icterus gularis* from Mexico (gift) (28864); 12 birds' skins, representing 3 species, from Mexico (purchase) (28880); 10 birds' skins, representing 7 species, from Mexico (purchase) (28981); 8 birds' skins, representing 6 species, from Mexico (purchase) (28982); small collection of Mexican mammals (purchase) (29357).

WEBBER, H. J., and SWINGLE, W. T. (Eustis, Fla.): Specimens of *Cambarus* from a cave in Citrus County. 28427.

WEBSTER, Mrs. H. B. (See under Agriculture, Department of.)

[1] These sponges have been illustrated by Dr. Rauff in "Paleontographica," Vol. XL.

WEEDON, W. C. (U. S. National Museum): Hickory branch infested with Longicorn borer, *Chion cinctus*. 29189.

WEIBEL, E. G. (Fort Huachuca, Ariz.): Skin and skull of skunk, *Conepatus mapurito*. 29241.

WELLESLEY COLLEGE. (See under Agriculture, Department of.)

WEST, G. B. (Washington, D. C.): Badge of the Society of the Sons of the American Revolution. Purchase. 29532.

WETHERBY, A. G. (Magnetic City, N. C.): Shells from North Carolina and Rodrigues Island, East Africa (28490); 4 rude spear-heads of white quartz (29374).

WHITE, Mrs. C. A. (care Dr. White, U. S. Geological Survey): Candle berries from North Dighton, Mass. 28519.

WHITE, DAVID. (See under James, I. E.)

WHITE, Mrs. U. B. (Elyria, Ohio): Three coins and ethnological objects from Burma. Purchase. 29407.

WHITEAVES, J. F. (Dominion General Survey, Ottawa, Canada): Twenty-two specimens of rare and valuable Unionidæ obtained principally from Canada and the northern provinces. 28696.

WHITEHEAD, CABELL (Washington, D. C.): Specimen of sipylite from Amherst County, Va. Exchange. 28456.

WHITEHEAD, J. J. (Waverly, N. Y.): Tooth of Sperm Whale from Chemung River, New York. 28444.

WIDMANN, O. (Old Orchard, Mo.): Seven eggs (1 set) of Bewick's Wren, *Thryothorus Bewickii*, 5 eggs each (2 sets) of Carolina Wren, *Thryothorus ludovicianus*, 5 eggs (1 set) of Yellowbilled Cuckoo, *Coccyzus americanus*, from Missouri. 28678.

WILCOX, J. (East Chatham, N. Y.): Barred Plymouth Rock hen. 29204.

WILCOX, Dr. TIMOTHY E., U. S. Army (Fort Huachuca, Ariz.): Eighteen herbarium specimens. 29393. (Presented to the Smithsonian Institution and deposited in the National Museum.) (See under Agriculture, Department of.)

WILCOX, W. D. (See under Interior Department, U. S. Geological Survey.)

WILD, Mrs. E. A. (Cambridge, Mass.): Ores from Nevada. 28836.

WILD, GEORGE (Ashton-under-Lyne, England), through William Moss: Carboniferous plants. 28459.

WILLETT, HENRY (Montpelier Terrace, Brighton, England): Photographs of a teapot, representing two views, made of Egyptian black, or black basalt ware. 28934.

WILLIAMS, F. H. (Greene, N. Y.): Bat. 28611.

WILLIAMS, Dr. F. H. (Bristol, Conn.), through Prof. Mason: Plaster cast of a pottery pipe, the original found 3 miles east of Marseilles, Ill., also cast of a fragment of pottery with Caribbean decoration, found in Georgia. 28924.

WILLIAMS, R. S. (Columbia Falls, Mont.), through Major Bendire, U. S. Army: Seven birds' skins, representing 4 species, from Montana. 28373.

WILLIAMSBURG SCIENTIFIC SOCIETY (Brooklyn, N. Y.), through Louis Kirsch, president: Skull of Marten, *Mustela americana*, from Montana, moss and shells from the West Indies. 29122. (Presented to the Smithsonian Institution and deposited in the National Museum.)

WILLOUGHBY, C. C. (See under Smithsonian Institution, Bureau of Ethnology.)

WILMAR, Rev. G. T. (Chatham, Va.), through W. V. Cox: Larvæ of Saddleback caterpillar, *Empretia stimulans*. 28469.

WILSON, G. J. (Cumberland, Ontario, Canada): Species of *Mallotus*, probably *Mallotus villosus*, belonging to the Post-Tertiary age. 28838.

WILSON, J. O. (See under Colonization Society.)

WILSON, Rev. S. G. (Tabriz, Persia): Onyx marbles and tiles from Persia. 28766.

WILSON, Dr. THOMAS (U. S. National Museum): Large spear-head from Takoma, Md. (28321); steatite vessel from the Clifton Quarry, Virginia (28322); ancient Phœnician glass vase (28333); unfinished Alaskan wood carving (28648); stone pendant or sinker and 3 drilled ceremonial objects found near Chillicothe, Ohio (28668); grooved ax found near Marlboro, Md. (28695);

WILSON, Dr. THOMAS—continued.
model of a Swiss lake dwelling (28699); grooved ax found on the surface of the Old Dominion track, Jackson City, Va. (28821). Deposit. (See under M. le Prince Paul Poutjatine.)
WINSLOW, Lieut. HERBERT, U. S. Navy (Navy-Yard, Washington, D. C.): Eight ethnological objects from Samoa. Deposit. 29413.
WINSTON, ISAAC (U. S. Geological Survey): Concretion. 29166.
WOLLAM, HAROLD (Rising Sun, Ohio): Silver medal. 28700. (Deposited in the Smithsonian Institution and transferred to the National Museum.)
WOLTZ, GEORGE (U. S. National Museum): Night Heron, *Nycticorax nycticorax nævius*, in the flesh. 28545.
WOOD, N. R. (U. S. National Museum): Parrot, *Eclectus roratus* (28814); skin of a weasel, *Putorius peninsulæ* (?) (29064).
WOODRUFF, Dr. C. E., U. S. Army (Fort Assinniboine, Mont.): Skull of Little Poplar, a subchief of the Cree tribe from Canada. 28559.
WOODRUFF, F. M. (Chicago Academy of Sciences, Chicago, Ill.): Pair of Smith's Longspur, *Calcarius pictus*. 29168.
WOOLMAN, A. J. (See under Central High School, Duluth, and J. T. Scovell.)
WOOLMAN, LOUIS (Philadelphia, Pa.): Three slides of fossil diatoms from Hammond's brickyard, Cold Spring, Long Island, N. Y. 28534.
WOMAN'S ANTHROPOLOGICAL SOCIETY (care Prof. Mason): Two pottery spindle whorls of the French Basques. Deposit. 29037.
WOOSTER, A. F. (Norfolk, Conn.): Connecticut election tickets and foreign postage stamps. 28524.
WOOTEN, E. O. (See under Agriculture, Department of.)
WORTHEN, C. K. (Warsaw, Ill.): Mammal skins and skulls (gift) (28795); 12 specimens of Townsend's Junco, *Junco Townsendi*, and 6 specimens of White-naped Nuthatch, *Sitta pygmæa leuconucha* from Lower California (exchange) (29017); 12 skins and skull of shrews, *Sorex Trowbridgei*, from Nicasio, Cal. (purchase) (29082); collection of mammal skins and skulls from British Columbia (purchase) (29423); Field Mouse, *Microtus oregonus*, and 6 specimens of Pocket Mouse, *Perognathus spinatus* (purchase) (29460).
WRIGHT, Prof. R. RAMSAY. (See under Toronto, University of.)
WURZLOW, H. (See under Agriculture, Department of.)
WYOMING, UNIVERSITY OF (Laramie, Wyo.), through A. A. Johnson, president: Ore. 28828. (Returned.)
YATES, JESSE (Atlantic City, N. J.): Specimen of Big-eyes, *Priacanthus altus* 28372.
YATES, R. G. (Gallatin, Mo.): Stag Beetle, *Lucanus elephus*, L. 28621.
YEATES, W. S. (See under Georgia Geological Survey.)
YECKLEY, W. T. (Navajoe, Okla.): Jeffersite (?). 29098.
YOUNG, J. A. (Bellevue, Iowa): Two crinoids and 2 fossils, 6 arrow-heads and 2 fragments of pottery, rattle of a rattlesnake, punching from the steel gunboat *Ericsson*, built in 1894 at Dubuque. 28946.
YOUNG NATURALISTS' SOCIETY (Seattle, Wash.), through Prof. O. B. Johnson: Series of varieties of *Terebratella transversa*, Sby., from Puget Sound (28720); 8 marine shells from the same locality, forwarded through J. E. Chilberg, curator (29228); specimens of *Semele rubropicta* (29439).
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Bulletin, (5) V, pts. 1–3, 1894.

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Le Naturaliste, XXI, 1895; XXII, pts. 1–6, 1895.

Halifax.

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ASHMEAD, WILLIAM H. Notes on cotton insects found in Mississippi.

Insect Life, VII, No. 3, Dec., 1894, pp. 240–247; No. 4, pp. 320–326.

An enumeration of the species found on cotton at Utica, Miss. They belong to the orders Orthoptera, Neuroptera, Platyptera, Hymenoptera, Coleoptera, Hemiptera, Lepidoptera, and Diptera. The following new species are described: *Thrips trifasciatus*, *Psocus gossypii*, *Zachresta dimidiata*, *Limneria mississippiensis*, *Lymeon annulicornis*, *Otacustes chrysopæ*, and *O. atriceps*. *Chrysopophagus compressicornis* is described as a new genus and species.

(See also under CHARLES V. RILEY.)

BAUR, G. The relationship of the Lacertilian genus *Anniella*, Gray.

Proc. U. S. Nat. Mus., XVII, No. 1005, Nov. 15, 1894, pp. 345-351.

BEAN, BARTON A. Scientific results of explorations by the U. S. Fish Commission Steamer *Albatross*. XXXIII.—Descriptions of two new flounders, *Gastropsetta frontalis* and *Cyclopsetta Chittendeni*.

Proc. U. S. Nat. Mus., XVII, No. 1030, May 11, 1895, pp. 633–636, figs. 1–3.

In this paper is described a new genus and species, *Gastropsetta frontalis*, taken by the steamer *Albatross* in the Gulf of Mexico in 1885. The other species, which was presented by the late Dr. John F. Chittenden, of the Victoria Institute, Trinidad, is provisionally placed with Dr. Gill's recent genus, *Cyclopsetta*.

(See also under TARLETON H. BEAN.)

BEAN, TARLETON HOFFMAN. Description of a new species of Rock Fish, *Sebastichthys brevispinis*, from Alaska.

Proc. U. S. Nat. Mus., XVII, No. 1027, May 11, 1895, pp. 627–628.

The specimen described in this paper was taken at Hassler Harbor, Alaska, in 1882, by Capt H. E. Nichols, U. S. Navy.

—— Description of a new species of fish, *Bleekeria Gilli*.

Proc. U. S. Nat. Mus., XVII, No. 1028, May 11, 1895, pp. 629–630.

This paper is based upon eleven examples of Sand Lance, presumably from the North Pacific, and part of the Stimpson collections.

—— Report on the Department of Fishes in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 159–161.

(See also under G. BROWN GOODE.)

BEAN, TARLETON H. and BARTON A. Description of *Gobioides broussoneti*, a fish new to North America, from the Gulf of Mexico.

Proc. U. S. Nat. Mus., XVII, No. 1029, May 11, 1895, pp. 631–632, fig. 1.

BEESON, CHARLES H.

(See under CARL H. EIGENMANN.)

BENDIRE, CHARLES. Description of nests and eggs of some new birds collected on the Island of Aldabra, northwest of Madagascar, by Dr. W. L. Abbott.

Proc. U. S. Nat. Mus., XVII, No. 983, July 19, 1894, pp. 39–41.

—— The American Barn Owl breeding at Washington, D. C., in winter.

Auk, XII, No. 2, Apr., 1895, pp. 180–181.

Mentions the occurrence of two young birds in the Smithsonian grounds in December and February of 1894 and 1895, respectively.

—— Report on the Department of Oology in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 153–154.

BENEDICT, JAMES E. Scientific results of explorations by the U. S. Fish Commission steamer *Albatross*. No. XXXI.—Descriptions of new genera and species of crabs of the family Lithodidæ, with notes on the young of *Lithodes camtschaticus* and *Lithodes brevipes*.

Proc. U. S. Nat. Mus., XVII, No. 1016, Jan. 29, 1895, pp. 479–488.

Four new genera and eleven new species are described. They are based on specimens collected by the steamer *Albatross* and by Dr. W. H. Dall and Mr. J. G. Swan, chiefly from the North Pacific.

BIGELOW, ROBERT PAYNE. Scientific results of explorations by the U. S. Fish Commission steamer *Albatross*. No. XXXII.—Report upon the Crustacea of the order Stomatopoda collected by the steamer *Albatross* between 1885 and 1891, and on other specimens in the U. S. National Museum.

Proc. U. S. Nat. Mus., XVII, No. 1017, Feb. 5, 1895, pp. 489–550, pls. XX–XXII, figs. 1–28.

A comprehensive treatment of the group, with analytical keys to all the genera and species. Detailed descriptions are added of species first described by Dr. Bigelow in Johns Hopkins University Circular, 106, June, 1893, p. 100. *Odontodactylus*, there ranked as a subgenus, is here made a genus.

BREWSTER, WILLIAM. Notes on certain Flycatchers of the genus *Empidonax*.

Auk, No. 2, Apr., 1895, pp. 157–163.

Empidonax virescens (Vieillot) is shown to be the proper name for the bird long known as *E. acadicus* (Gmelin), and two other species are affected, in that the name *Empidonax traillii* is restricted to the one heretofore known as *E. pusillus* (*Tyrannula pusilla* of Swainson

BREWSTER, WILLIAM—Continued.
being considered indeterminable), and *Empidonax traillii alnorum* is proposed as a new name for the eastern form hitherto known as *E. pusillus traillii*.

BROWN, EDWARD J. Bird notes from Virginia.
Auk, XI, No. 3, July, 1894, p. 259.
Mentions several species met with at Smith's Island, among them *Tringa fuscicollis*, not before recorded from the State.

CASANOWICZ, I. M. Religious ceremonies in the Talmud.
Proc. Am. Oriental Soc., XVI, 1894, pp. LXXVI-LXXXII.

CHITTENDEN, FRANK H. Two new species of beetles of the Tenebrionid genus *Echocerus*.
Proc. U. S. Nat. Mus., XVIII, No. 1041, advance sheet, Jan. 16, 1895, pp. 79–80.
Describes as new species *E. dentiger* and *E. recurvatus*.

—— The Potato-Bud Weevil (*Anthonomus nigrinus*, Boh.).
Insect Life, VII, No. 4, Mar., 1895, pp. 350–352.
An account of the habits of this insect, and the damage which it does to potato buds.

CLARK, ALONZO HOWARD. Report on the Historical Collections in the U. S. National Museum, 1892.
Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 115–120.

CLARKE, FRANK W. The constitution of the Zeolites.
Am. Journ. Sci. (Series III), XLIX, Sept., 1894, p. 187.

—— An occurrence of Anorthite and Epidote.
Am. Journ. Sci. (Series III), XLIX, Nov., 1894, p. 429.

—— Report of the Committee on Atomic Weights, published during 1894.
Journ. Am. Chem. Soc. (Series III), L, Mar., 1895, p. 201.

—— The constitution of the Silicates.
Bull. U. S. Geol. Surv., No. 125, 1895, p. 109.

—— Report on the Department of Minerals in the U. S. National Museum, 1892.
Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 201–203.

CLARK, HUBERT LYMAN. The pterylography of certain American goat-suckers and owls.
Proc. U. S. Nat. Mus., XVII, No. 1018, May 11, 1895, pp. 551–572, figs. 1–11.

COCKERELL, T. D. A. Notes on the geographical distribution of scale insects.
Proc. U. S. Nat. Mus., XVII, No. 1026, May 11, 1895, pp. 615–625.

COQUILLETT, DANIEL W. Is *Cyrtoneura cæsia* an injurious insect?
Insect Life, VII, No. 4, Mar., 1895, pp. 338–339, fig. 2.
An account of the supposed rearing of this insect from squash roots, and a suggestion that the facts in the case were incorrect, and that the insect is a scavenger rather than a plant feeder.

—— A Cecidomyiid that lives on poison oak.
Insect Life, VII, No. 4, Mar., 1895, p. 348.
Description of *Cecidomyia rhois*, new species.

COULTER, JOHN M., and ROSE, JOSEPH NELSON. *Musineon* of Rafinesque.
Botan. Gaz., XX, No. 6, June, 1895, pp. 258–260.
This paper is a revision of the genus *Musineon*. One new species is described, *Musineon alpinum*.

COVILLE, FREDERICK VERNON. The wild rice of Minnesota.
Botan. Gaz., XIX, Dec., 1894, pp. 504–509.

—— Report of the Botanist, U. S. Department of Agriculture, for 1893.
Rep. Secy. Agric., 1893 (1894), pp. 235–244.

—— A reply to Dr. Robinson's criticism of the List of Pteridophyta and Spermatophyta of Northeastern America.
Botan. Gaz., XX, Apr., 1895, pp. 162–167.

CROSS, C. WHITMAN. The Laccolitic Mountain Groups of Colorado, Utah, and Arizona.
Fourteenth Ann. Rep. U. S. Geol. Surv., 1892–93, pp. 159–241.
This paper includes a description of the Elk Mountain collections and other rocks in the U. S. National Museum.

DALL, WILLIAM HEALEY. Monograph of the genus *Gnathodon*, Gray (*Rangia*, Desmoulins).
Proc. U. S. Nat. Mus., XVII, No. 988, July 23, 1894, pp. 89–100, pl. VII, figs. 1–10.
In this paper the genus *Gnathodon*, which, hitherto, has held a very uncertain place in systematic classification, is placed by the author in the Mactridæ, on account of the characters of both the shell and the soft parts, and it is shown that the young shell is essentially mactroid. The synonymy of the species, notes, and descriptions are given.

—— Synopsis of the Mactridæ of North America.
Nautilus, VIII, No. 3, July, 1894, pp. 25–28; No. 4, Aug., 1894, pp. 39–43.

DALL, WILLIAM HEALEY—Continued.

I. A revision of the classification of the Mactridæ of the eastern coast of the United States, with an enumeration of the species.

II. This paper contains a complete revision of the Mactridæ of the west coast of North America, south to Panama, with an enumeration of the species.

—— Notes on the Miocene and Pliocene of Gay Head, Martha's Vineyard, Massachusetts, and on the "Land Phosphate" of the Ashley River district, South Carolina.

Am. Journ. Sci., XLVIII, Oct., 1894, pp. 297–301.

This paper enumerates for the first time the fossils of the Miocene beds of Marthas Vineyard, and describes two new species. The Pliocene is recognized in the beds above the Miocene and a list of the species found in it is given. It is shown that the Ashley marls of South Carolina and the phosphatic rock which overlies them are probably Miocene and not Eocene in age, as hitherto supposed. A list of species from the phosphate rock is given, which includes the characteristic Miocene type *Ecphora quadricostata*.

—— Cruise of the steam yacht *Wild Duck* in the Bahamas, January to April, 1893, in charge of Alexander Agassiz. Notes on the shells collected.

Bull. Mus. Comp. Zool., XXV, No. 9, Oct., 1894, pp. 113–124, with plate.

This paper consists of a set of notes on a small lot of material sent to the Smithsonian Institution some years ago by Dr. J. J. Brown, of Sheboygan, Wis., from Watling Island, Bahamas; another small lot from the same place, collected by the U. S. Fish Commission, and a third lot collected by Dr. Alexander Agassiz. The lagoon species are peculiarly thin, small in size, and, when colored, quite brilliant. Notes are given on 12 marine and 16 land species and varieties, of which 5 are new. The genus *Cerion* (formerly called *Strophia*) is divided into subgenera founded on characters of the internal laminæ.

—— Description of a new species of *Doridium* from Puget Sound.

Nautilus, VIII, No. 7, Nov., 1894, pp. 73–74.

A description of an interesting new Doridium (*D. adellæ*, Dall).

—— How I came to be a paleontologist.

Outdoor World, V, No. 11, Nov., 1894, pp. 335–336.

A brief autobiographical note with portrait.

—— The mechanical cause of the folds in the aperture of the shell of Gastropoda.

Am. Naturalist, XXVIII, Nov., 1894, pp. 909–914, figs. 1–3.

Adapted from the Transactions of the Wagner Free Institute of Science, III, 1890, p. 58. Mr. Dall shows that in those Gastropods which have plicate apertures the adductor muscle, which is attached to the columella, is placed deeper within the shell than in the non-plicate forms; that in such cases the body of the animal covered with its mantle is compressed as it is being drawn into the shell and therefore longitudinal wrinkles are formed in the mantle. The secreting surfaces deposit shelly material, which, in the folds, takes the form of ridges in the aperture of the shell.

—— A new Chiton from California.

Nautilus, VIII, No. 8, Dec., 1894, pp. 90–91.

A description of a new Chiton (*Lepidopleurus percrassus*, Dall). In this species the girdle is extended in such a manner as to partly separate the shelly portions of the valves. For this peculiar form is proposed a section *Oldroydia*.

—— On a new species of *Holospira* from Texas.

Nautilus, VIII, No. 10, Feb., 1895, p. 112.

A description of a new Holospira (*H. pasonis*, Dall), from El Paso County, Tex.

—— Contributions to the Tertiary fauna of Florida, with especial reference to the Miocene silex beds of Tampa and the Caloosahatchie River. Part III.—A new classification of the Pelecypoda.

Trans. Wagner Free Inst. Sci., III, pt. III, Mar., 1895, pp. 483–570.

The author in 1889, in a "Catalogue of the shell-bearing mollusks of the southeastern United States," proposed a new classification of the Pelecypoda. This paper is an amplification of that work, bringing it down to the present date, but conforming to the general principles on which the earlier classification was founded. In this system the shell, the anatomy, the embryology, and evidence from all sources are considered and made use of. A brief dissertation on the shell, anatomy, and functions of the Pelecypoda is given. Then follows an enumeration of the orders, suborders, superfamilies, and families of the Pelecypoda, each of which is differentially defined in a manner enabling a direct comparison to be made between groups of the same rank. Under each family is given its range in geological time and a list of the principal genera believed to be referable to it. Some notes on the principles of nomenclature applied in the work and an index to the genera are appended. The importance of this paper lies in the revision of the diagnostic characters, which are endeavored to be made strictly comparable in the different groups, and when common to a larger group are not repeated in the definitions of its subordinate divisions; and in the bringing up to date of the data employed.

DALL, WILLIAM HEALEY. A review of the genera of recent and Tertiary Mactridæ and Mesodesmatidæ.

Proc. Malacological Soc., London, I, pt. 5, Mar., 1895, pp. 203–213.

A description of the parts of the hinge in the Mactracea in which the several parts are named and discriminated, followed by a table in which the larger groups are characterized, several new ones discriminated, and the general classification of the group thoroughly revised.

—— New species of shells from the Galapagos Islands.

Nautilus, VIII, No. 11, Mar., 1895, pp. 126–127.

Two new and interesting species of *Bulimulus* are described, *B. reibischi*, Dall, and *B. Tanneri*, Dall.

—— New species of shells from Puget Sound.

Nautilus, VIII, No. 11, Mar., 1895, pp. 129–130.

Description of two minute land shells from Puget Sound, viz: *Patulastra? pugetensis*, Dall, and *Pyramidula? Randolphi*, Dall, whose generic position is doubtful.

—— An undescribed *Meretrix* from Florida.

Nautilus, IX, No. 1, May, 1895, pp. 10–11.

Describes *Meretrix Simpsoni*, Dall.

—— Review of [The Cambridge Natural History], Vol. III, Molluscs and Brachiopods.

Science (New series), I, No. 22, May 31, 1895, p. 610.

A review of the volume cited.

—— Report on the Department of Mollusks (including Cenozoic fossils) in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 163–167.

DEWEY, LYSTER H. Nut grass.

Circ. No. 2, Div. Botany, U. S. Dept. Agric., Oct. 16, 1894. pp. 1–4, fig. 1.

This circular contains a description of nut grass, and gives information for getting rid of it.

—— The Russian Thistle.

Circ. No. 3, Div. Botany, U. S. Dept. Agric., Jan. 4, 1895, pp. 1–8, figs. 1–3.

This circular contains a description of the Russian thistle.

—— Weeds, and how to kill them.

Farmers' Bull. No. 28, U. S. Dept. Agric., May 28, 1895, pp. 1–31, with figures.

This bulletin contains a description of eleven troublesome weeds, with directions for destroying them.

DIXON, WILLIAM S. Report on the Section of Materia Medica in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), p. 133.

EIGENMANN, CARL H., and BEESON, CHARLES H. A revision of the fishes of the subfamily Sebastinæ of the Pacific Coast of America.

Proc. U. S. Nat. Mus., XVII, No. 1009, Nov. 15, 1894, pp. 375–407.

The object of this paper, as stated by the authors, is to present analytical keys, synonymy, and bibliography of the viviparous genera of Pacific Sebastinæ. For convenience, the oviparous genera of Sebastinæ have also been added.

FARRINGTON, OLIVER C. An analysis of Jadeite from Mogoung, Burmah.

Proc. U. S. Nat. Mus., XVII, No. 981, July 19, 1894, pp. 29–31.

FAXON, WALTER. Reports on an exploration of the west coasts of Mexico, Central and South America, and off the Galapagos Islands, in charge of Alexander Agassiz, by the U. S. Fish Commission steamer *Albatross*, during 1891, Lieut. Commander Z. L. Tanner, U. S. N., commanding. XV.—The Stalk-eyed Crustacea.

Mem. Mus. Comp. Zool., XVIII, Apr., 1895, pp. 1–292, pls. A–K, I–LVII.

The systematic account of the species is followed by chapters on the distribution and on the colors of deep-sea crustacea. Tables are given showing geographical and bathymetrical distribution, and records of dredging stations, etc.

FERNOW, BERNHARD EDUARD. Report on the Section of Forestry in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), p. 125.

FISHER, A. K. The capture of *Basilinna leucotis* in southern Arizona.

Auk, XI, No. 4, Oct., 1894, pp. 325–326.

Records the capture by himself of a specimen of this species in the Chiricahua Mountains, Arizona, June 9, 1894.

—— Occurrence of *Aphelocoma cyanotis* in western Texas.

Auk, XI, No. 4, Oct., 1894, p. 327.

Records three specimens in the collection of the Department of Agriculture, taken at Paisano, Tex., in July, 1890. This is the first record of the occurrence of this species in the United States.

GAULT, BENJAMIN T. The Willow Thrush (*Turdus fuscescens salicicolus*), a migrant in northeastern Illinois.

Auk, XII, No 1, Jan., 1895, p. 85.

Two specimens of this Thrush obtained in the spring of 1894 are recorded from Glenellyn, Ill.

GIESBRECHT, WILHELM. Reports on the dredging operations off the west coast of Central America to the Galapagos, to the west coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, carried on by the U. S. Fish Commission steamer *Albatross* during 1891, Lieut. Commander Z. L. Tanner, U. S. N, commanding. XVI.—Die Pelagischen Copepoden.

Bull. Mus. Comp. Zool., XXV, No. 12, Apr., 1895, pp. 243–263, pls. I–IV.

A list is given of the species taken at each station, followed by a systematic list, with descriptions of 3 new genera and 10 new species.

GILL, THEODORE. Lepidosirenids and Bdellostomids.

Am. Naturalist, XXVIII, No. 331, July 13, 1894, pp. 581–584.

In opposition to Dr. Howard Ayers, it is claimed that the genera *Lepidosiren* and *Protopterus* are perfectly distinct, and that species confounded under *Bdellostoma* are not only specifically but generically distinct, constituting the genera *Heptatrema* and *Polistotrema*.

—— The nomenclature of the family Pœciliidæ or Cyprinodontidæ.

Proc. U. S. Nat. Mus., XVII, No. 991, July 19, 1894, pp. 115–116.

The family name Pœciliidæ is substituted for Cyprinodontes and the reasons therefor given; the synonyms of Pœciliidæ and Pœciliinæ are added.

—— The differential characters of the Salmonidæ and Thymallidæ.

Proc. U. S. Nat. Mus., XVII. No. 992, July 19, 1894, pp. 117-122.

The salmoniform fishes with simple ovaries are divided into the families Salmonidæ and Thymallidæ; the former is subdivided into the subfamilies Salmoninæ, Coregoninæ, and Stenodontinæ. Diagnoses of all are given. The genera are also enumerated with their synonyms.

—— On the relations and nomenclature of *Stizostedion* or *Lucioperca*.

Proc. U. S. Nat. Mus., XVII, No. 993, July 21, 1894, pp. 123–128.

The history of the nomenclature of the pike-perches is given, and the retention of *Stizostedion*, instead of *Lucioperca*, justified. A synopsis is also given of all the species. The supposed order of differentiation of the genera of Percinæ is indicated by a genealogical tree.

GILL, THEODORE. On the nomenclature and characteristics of the Lampreys.

Proc. U. S. Nat. Mus., XVII, No. 989, July 23, 1894, pp. 107–110.

Ammocœtes is suppressed as a generic name, and shown to be a stage common to all arctogæan lampreys. *Petromyzon* and *Lampetra* are named as the longest established genera and their synonyms enumerated. The families Mordaciidæ and Petromyzonidæ are defined and justified.

—— An Australasian subfamily of fresh water Atherinoid fishes.

Am. Naturalist, XXVIII, No. 332, Aug. 14, 1894, pp. 708–709.

The genus *Nematocentris* should be called by the prior name *Melanotænia*, and the genus *Aristeus* of Castelnau (not Duvernoy) is renamed *Rhombatractus*. Both belong to a freshwater Australasian subfamily newly named Melanotæniinæ, and are closely related.

—— A new bassalian type of crabs [Retroplumidæ].

Am. Naturalist, XXVIII, No. 336, Dec. 5, 1894, pp. 1043–1045.

The genus *Archæoplax* of Alcock and Anderson (not Stimpson) is renamed *Retropluma* and recognized as the type of a peculiar family of Grapsoidea–Retroplumidæ.

—— *Rangia* the proper name of the Mactroid genus *Gnathodon*.

Nautilus, VIII, No. 9, Jan. 1, 1895, pp. 102–103.

The name *Gnathodon* had been used in ichthyology earlier than conchology, and consequently its use is precluded in the latter department. Therefore the name *Rangia*, generally used by recent conchologists, should be retained.

—— The genus *Leptophidium* [renamed *Lepophidium*].

Am. Naturalist, XXIX, No. 338, Feb., 1895, pp. 167–168.

The name *Leptophidium* was used by Hallowell in 1860, and consequently *Leptophidium* of Gill (1863) should receive another name; *Lepophidium* is proposed.

—— *Pithecanthropus erectus*.

Nation, LX, Feb. 7, 1895, p. 105.

The genus *Pithecanthropus* is claimed to be undistinguishable, so far as the characters have been given, from *Homo*, and certainly no characters have been adduced to justify family differentiation.

—— The Geoffroy Saint Hilaires and Bory de Saint Vincent.

Nation, LX, Feb. 21, 1895, p. 145.

The proper names are Geoffroy and Bory, not Saint Hilaire or Saint Vincent, as had been recently given.

GILL, THEODORE. The nomenclature of the Myliobatidæ or Aëtobatidæ.

Proc. U. S. Nat. Mus., XVII, No. 990, Feb. 25, 1895, pp. 111–114.

Aëtobatus is retained for *Aëtobatis* rather than *Myliobatis*, and the family name Aëtobatidæ and subfamilies Myliobatinæ and Aëtobatinæ provisionally retained. The synonyms of all are added.

—— On the Torpedoes.

Science (New series), I, No. 18, May 3, 1895, pp. 502–503.

It was shown that the name *Torpedo* was first applied (by Forskål in 1775) as a generic term to the electric catfish of the Nile, subsequently called *Malapterurus*, and that for the Torpedo rays Blainville's name, *Narcobatus*, must be revived.

—— The genera of Branchiostomidæ.

Am. Naturalist, XXIX, No. 341, May, 1895, pp. 457–459.

The family of Branchiostomidæ has five genera successively named *Branchiostoma*, *Epigonichthys*, *Asymetron*, *Paramphioxus*, and *Amphioxides*. *Amphioxides* is a new name proposed for *Branchiostoma pelagicum*. The term Actinomimes is proposed for the so-called rays of the Branchiostomids and the so-called ventral fins are designated the Sympodium.

—— The lowest of the vertebrates and their origin.

Science (New series), I, No. 24, June 14, 1895, pp. 645–649.

A review of Mr. Arthur Willey's work, entitled "Amphioxus and the Ancestry of the Vertebrates," is given. Five genera and 8 species of Branchiostomids are recognized, and the specific characters generally used are criticized and others suggested. The relations of the including groups and their bearing on the question of ancestry are briefly considered.

—— The relation of the ancient and modern Ceratodontidæ.

Science (New series), I, No. 26, June 28, 1895, p. 725.

It is claimed that *Ceratodus* is not represented by living species, but that those belong to a distinct genus, which should be called *Neoceratodus*. The ancient forms referred to the former belong to at least two genera, *Ceratodus* and *Anticeratodus* (new).

GOODE, GEORGE BROWN. America's relation to the advance of science.

Science (New series), I, No. 1, Jan. 4, 1895, pp. 4–9.

The above is an abstract of an address delivered before the Philosophical Society of Washington November 24, 1894.

—— [Review of] The life and writings of Constantine Rafinesque. (Filson Club

GOODE, GEORGE BROWN—Continued. Publications, No. 10.) By R. Ellsworth Call.

Science (New series), I, No. 14, Apr. 5, 1895, pp. 384–387.

—— The ideal index to scientific literature.

Science (New series), I, No. 16, Apr. 19, 1895, pp. 433–437.

—— Report upon the Condition and Progress of the U. S. National Museum during the year ending June 30, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 1–97.

GOODE, G. BROWN, and BEAN, TARLETON H. Scientific results of explorations by the U. S. Fish Commission steamer *Albatross*. XXVIII.—On Cetomimidæ and Rondeletiidæ, two new families of Bathybial fishes from the Northwestern Atlantic.

Proc. U. S. Nat. Mus., XVII, No. 1012, Jan. 26, 1895, pp. 451–454, pl. XVII.

In this paper is given a diagnosis of two new families of fishes, with descriptions of two new genera, *Cetomimus* and *Rondeletia*. The species described are *Cetomimus Gillii*, *C. Storeri*, and *Rondeletia bicolor*.

—— Scientific results of explorations by the U. S. Fish Commission steamer *Albatross*. XXIX.—A revision of the order Heteromi, deep-sea fishes, with a description of the new generic types, *Macdonaldia* and *Lipogenys*.

Proc. U. S. Nat. Mus., XVII, No. 1013, Jan. 26, 1895, pp. 455–470, pl. XVIII.

—— Scientific results of explorations by the U. S. Fish Commission steamer *Albatross*. XXX.—On *Harriotta*, a new type of Chimæroid fish from the deeper waters of the Northwestern Atlantic.

Proc. U. S. Nat. Mus., XVII, No. 1014, Jan. 26, 1895, pp. 471–473, pl. XIX.

HASSALL, ALBERT.

(See under CHARLES W. STILES.)

HOLMES, WILLIAM HENRY. Report on the Department of American Aboriginal Pottery in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), p. 109.

HOWARD, LELAND O. Two parasites of important scale insects.

Insect Life, VII, No. 1, Sept., 1894, pp. 5–8, figs. 2, 3.

Describes *Prospalta*, new genus, *Murtfeldtii*, new species, and *Ablerus*, new genus, Clisiocampæ (Ashmead).

HOWARD, LELAND O. The eastern occurrence of the San José Scale.

Insect Life, VII, No. 2, Oct., 1894, pp. 153–163.

An account of the different localities in the eastern United States into which *Aspidiotus perniciosus* had been introduced, accompanied by brief remarks on remedies.

—— Damage by the American Locust.

Insect Life, VII, No. 3, Dec., 1894, pp. 220–229, figs. 19–22.

An account of the injurious outbreaks of *Schistocerca americana*, with special reference to the occurrence of this species in injurious numbers in 1894, near Roanoke, Va., accompanied by a description of the earlier stages, and a report by Mr. D. W. Coquillett upon an investigation of the Roanoke outbreak.

—— The Maple Pseudococcus (*Pseudococcus aceris*, Geoff.).

Insect Life, VII, No. 3, Dec., 1894, pp. 235–240, figs. 23–24.

An account of the spread of this bark louse, with a description of its natural history and parasites, and some consideration of the remedies.

—— A new parasite of *Mytilaspis pomorum*.

Insect Life, VII, No. 3, Dec. 1894, p. 456.

Describes *Chiloneurus diaspidinarum* as a new species.

—— A new pear insect.

Insect Life, VII, No. 3, Dec., 1894, pp. 258–260, fig. 26.

A description of the work of *Agrilus sinuatus*, Ol. in pear trees in New Jersey.

—— Note on the mouth parts of *Stenopelmatus*.

Proc. Ent. Soc. Wash., III, No. 2, Jan. 8, 1895, pp. 102–103.

Describes the normal mouth parts of *S. crassiatus* and of an abnormal individual in which the right galea was curiously modified.

—— Further notes on the San José Scale.

Insect Life, VII, No. 4, March, 1895, pp. 283–295, fig. 29.

A summary is given of additional eastern localities infested, with an account of the remedies used in each; also a detailed account of the parasites found to affect the scale, and a few facts as to the original home of the species. Notes are given on twenty-nine remedial applications tested, and the possible future spread of the scale is referred to.

—— An Ortalid Fly injuring growing cereals.

Insect Life, VII, No. 4, Mar., 1895, pp. 352–354, fig. 34.

An account of *Chætopsis ænea*, Wied., with mention of rearing from corn, sugar cane, and oats.

HOWARD, LELAND O. The Gray Hair-Streak Butterfly and its damage to beans.

Insect Life, VII, No. 4, Mar., 1895, pp. 354–355, fig. 35.

An account of *Uranotes melinus*, Hübn.

—— On the Bothriothoracine insects of the United States.

Proc. U. S. Nat. Mus., XVII, No. 1025, May 11, 1895, pp. 605-613.

—— *Arrhenophagus* in America.

Proc. Ent. Soc. Wash., III, No. 4, June 22, 1895, pp. 239–240.

An account of the structural characters of the remarkable Encyrtine genus *Arrhenophagus*, Aurivillius, and an announcement that the type species and *A. chinnaspidis* have been found in America parasitic upon *Diaspis rosæ* at Kirkwood, Mo.; with some consideration of the systematic position of the genus.

(See also under CHARLES V. RILEY.)

KNOWLTON, FRANK HALL. A review of the fossil flora of Alaska, with descriptions of new species.

Proc. U. S. Nat. Mus., XVII, No. 998, Aug. 2, 1894, pp. 207–240, pl. IX.

—— A new fossil Hepatic from the Lower Yellowstone in Montana.

Bull. Torrey Botan. Club, XXI, No. 10, Oct. 24, 1894, pp. 458–459, pl. 219.

—— Notes on the examination of a collection of interglacial wood from the Muir Glacier, Alaska.

Journ. Geol., III, 1895, pp. 527–532, fig. 1.

Mentions the occurrence of *Picea sitchensis*, Carr., *Tsuga mertensiana*, Carr., and *Chamæcyparis nutkensis*, Spach.

—— Report on a small collection of fossil plants from Poverty Hill and Monte Cristo Mine on Spanish Peak, California.

Am. Geologist, XV, 1895, p. 377.

Mentions the occurrence of *Laurus salicifolia*, LX.

—— Report on a small collection of fossil leaves from Volcano Hill, Placer County, Cal.

Am. Geologist, XV, 1895, pp. 377–378.

Identifies *Ficus sordida? F. shastensis? Populus Zaddachi? Plantanus appendiculata?* and *Persea Dilleri?*

KOEHLER, SYLVESTER ROSA. Report on the Section of Graphic Arts in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 121–123.

LAMBE, LAWRENCE M. Sponges from the western coast of North America.

Trans. Roy. Soc. Canada, XII, Section IV, 1894 (June, 1895), pp. 113–138, pls. II–IV.

LAMBE, LAWRENCE M.—Continued.

This paper gives the results of a study of the sponges collected by Dr. William H. Dall and others in the North Pacific Ocean, Bering Sea, and the Arctic Ocean. With the exception of a few specimens, all are the property of the U. S. National Museum.

LINELL, MARTIN L. Description of a new species of Golden Beetle from Costa Rica.

Proc. U. S. Nat. Mus., XVIII, No. 1040, advance sheet Jan. 12, 1895, pp. 77-78.

Plusiotis Keithi is described and the habits and rarity of the golden and silvery colored species of the genus are referred to.

LŒNNBERG, EINAR. Notes on the reptiles and batrachians collected in Florida in 1892 and 1893.

Proc. U. S. Nat. Mus., XVII, No. 1003, Nov. 15, 1894, pp. 317-339, figs. 1-3.

LUCAS, FREDERIC AUGUSTUS. The bird's foot.

Nat. Sci., V, Sept., 1894, pp. 208-209.

This paper supports the proposition that the synpelmous condition of the deep plantar tendons in birds is the original one.

—— Notes on the anatomy and affinities of the Cœrebidæ and other American birds.

Proc. U. S. Nat. Mus., XVII, No. 1001, Nov. 15, 1894, pp. 299-312, figs. 1-12.

Concludes that Cœrebidæ is not a homogeneous group, but contains three distinct types; that among these, *Glossoptila* is the most peculiar; also that *Phainopepla* is clearly and nearly related to *Ampelis*.

—— Additional characters of the Macropterygidæ.

Auk, XII, No. 2, Apr., 1895, pp. 155-157, with figures.

Additional characters are given for this new family of swifts.

—— A new family of birds.

Auk, XII, No. 2, Apr., 1895, p. 186.

Notes that the anatomical characters of the genus *Procnias* entitle it to family rank.

—— The deep plantars in the Trochilidæ.

Ibis (Series 7), I, No. 2, Apr., 1895, pp. 298-299, with figures.

Notes that all previous descriptions and figures of deep plantar tendons in the Trochilidæ are wrong, and gives correct description and figure.

—— Report on the Department of Comparative Anatomy in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 181-183.

LUDWIG, HUBERT. Reports on explorations off the west coasts of Mexico, Central and South America, and off the Galapagos Islands, in charge of Alexander Agassiz, by the U. S. Fish Commission steamer *Albatross*, during 1891, Lieut. Commander Z. L. Tanner, U. S. N., commanding. XII.—The Holothurioidea.

Mem. Mus. Comp. Zool., XVII, No. 3, Oct., 1894, pp. 1-183, pls. I-XIX.

Full descriptions are given of the species which were noticed in a preliminary report published in the Bulletin of the Museum of Comparative Zoology, XXVI, No. 4, June, 1893, pp. 105-114. The species are finely illustrated, many of them by colored figures.

MARLATT, CHARLES L. The Buffalo Treehopper (*Ceresa bubalus*, Fab.).

Insect Life, VII, No. 1, Sept., 1894, pp. 8-14, figs. 4-7.

An account of the life history of this insect, with a description of its method of work and of its earlier stages, and an enumeration of its food plants and the remedies to be used against it.

—— The American species of *Scolioneura*, Kuw.

Proc. Ent. Soc. Wash., III, No. 4, June 22, 1895, pp. 234-236.

Describes *S. capitalis*, Norton, *S. canadensis*, new species, and *S. populi*, new species.

MARSH, OTHNIEL CHARLES. Report on the Department of Vertebrate Fossils in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 169-170.

MASON, OTIS TUFTON. Migration and the food quest; a study in the peopling of America.

Am. Anthropologist, VII, No. 3, July, 1894, pp. 275-292.

This paper calls attention to a great circle of the earth passing from the straits of Malacca to the Rio de la Plata mouth through a series of land-locked seas and culture areas of great value, especially in the line of food production and variety of employment. It calls attention to this great circle as an unbroken line of migration and of constant development of culture about the Pacific Ocean.

—— Summary of progress in anthropology.

Rep. Smithsonian Inst., 1893 (1894), pp. 601-629.

The object of this paper is to present in a few pages the progress made in the various branches of anthropology during the year 1893.

—— North American bows, arrows, and quivers.

Rep. Smithsonian Inst., 1893 (1894), pp. 631-680, pls. 37-94.

MASON, OTIS TUFTON—Continued.

The object of this paper is to study the manufacture, the ethnographic, and the geographic distribution of all the types of bows, arrows, and quivers among the North American tribes. The plan has been to treat these objects as specimens of natural history, and to consider their structure, function, and distribution on the line of environment and of evolution or elaboration, in a series of explanatory pages. Each separate piece is described as minutely as possible, so as to render the specimens in question types for future investigation.

—— Overlaying with copper by the American aborigines.

Proc. U. S. Nat. Mus., XVII, No 1015, Jan. 26, 1895, pp. 475–477, figs. 1–4.

This paper is based on two examples from the Tlinget Indians, Alaska, in which two wooden birds have their wings overlaid with cold-hammered sheets of copper and then engraved with totems.

—— Historic and ethnologic science.

Epoch, I, 1895, pp. 3–11.

The object of this paper is to show that the two lines of study, the historic and the ethnologic, are indispensable one to the other for investigating the progress of human culture.

—— Similar inventions in areas wide apart.

Science (New series), I, 1895, pp. 235–236.

This paper calls attention to the wide dispersion of a weaving frame or harness consisting of a series of slats, each one pierced in the middle. The warp threads pass alternately between the slats and through the holes, and this enables the weaver to shift the warp. The question is raised whether the Pueblo Indians invented this apparatus or received it from the Europeans.

—— The distribution of sledges.

This article calls attention to the fact that no sledge, snowshoe, or goggle has ever been discovered in South America.

—— Report on the Department of Ethnology in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus,), 1892 (1893), pp. 101–107.

MATTHEWS, R. S. Baird's Sandpiper near Washington, D. C.

Auk, XI, No. 4, Oct., 1894, p. 325.

Records the occurrence of a specimen of this species (now in the Museum collection) on the Potomac River, near Washington, Sept. 3, 1894.

MEARNS, EDGAR A. Description of a new species of Cotton Rat (*Sigmodon minima*) from New Mexico.

Proc. U. S. Nat. Mus., XVII, No. 994, July 19, 1894, pp. 129–130.

MERRILL, GEORGE P. On the formation of stalactites and gypsum incrustations in caves.

Proc. U. S. Nat. Mus., XVII, No. 985, July 23, 1894, pp. 77–81, pls. II–V.

Describes the peculiar vermicular and knurly stalactites of Wyandotte and Luray caves, and ascribes their formation to the action of capillarity. Also describes the peculiar curved and rosettiform gypsums from Mammoth and Wyandotte caves, ascribing their form to conditions of strain under which the spicules were pushed outward by growth from the bottom.

—— The formation of sandstone concretions.

Proc. U. S. Nat. Mus., XVII, No. 987, July 23, 1894, pp. 87–88, pl. VI.

Describes the formation of concretions through the oxidizing influence of water and air on concretionary masses of marcasite.

—— Notes on the petrography of the Paleozoic section in the vicinity of Three Forks, Montana.

Bull. U. S. Geol. Surv., No. 110, 1893 (1894), pp. 47–54, figs. 1, 2.

—— [The methods of testing slate.]

Trans. Am. Inst. Civil Engineers, XXXII, Dec., 1894, pp. 540–541.

A discussion of Prof. Mansfield Merriam's paper on the strength and weathering qualities of roofing slate.

—— The United States National Museum.

Cadet, Orono, Me., Mar., 1895, pp. 257–267, with plate.

A brief account setting forth the aims and present condition of the National Museum.

—— Notes on some eruptive rocks from Gallatin, Jefferson, and Madison counties, Montana.

Proc. U. S. Nat. Mus., XVII, No. 1031, May 11, 1895, pp. 637–673.

Describes the petrographic character of a series of rocks collected by the author and Dr. A. C. Peale, of the U. S. Geological Survey, during several seasons' field work in the region mentioned.

—— Disintegration of the granitic rocks of the District of Columbia.

Bull. Geol. Soc. Am., VI, 1895, pp. 331–332, with plate.

The author describes in detail the phases of the granitic disintegration, and gives analyses of fresh and disintegrated material. The disintegration is shown to have taken place since Cretaceous times, and to be accompanied by a comparatively small amount of decomposition. The theory is advanced that the disintegration is due mainly to hydration.

—— [Marble.]

Johnson's American Cyclopædia, VI, 1895, pp. 539–540.

MERRILL, GEORGE P. [Hawaiian lavas.]

Rep. U. S. Coast and Geodetic Survey, 1893 (1895), appendix 12, pp. 630–633.

The author gives petrographic characters and results of specific-gravity determinations of samples submitted by Mr. E. D. Preston, and discusses briefly the results with regard to their bearing upon the density of the earth.

—— Report on the Department of Geology in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 205–217, pl. III.

ORTMANN, ARNOLD. Reports on the dredging operations off the west coast of Central America to the Galapagos, to the west coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, carried on by the U. S. Fish Commission steamer *Albatross*, during 1891, Lieut. Commander Z. L. Tanner, U. S. N., commanding. XIV.—The Pelagic Schizopoda.

Bull. Mus. Comp. Zool., XXV, No. 8, Sept., 1894, pp. 99–111, with plate.

The author gives a list of eighteen species, with their geographical and vertical distribution. Three species are described as new.

PALMER, WILLIAM. Plumages of the Young Hooded Warbler.

Auk, XI, No. 4, Oct., 1894, pp. 282–291, with four text figures.

Describes the changes of plumage in both sexes in the young of the Hooded Warbler, and corrects some erroneous statements on these points in the literature of the species.

—— An Asiatic Cuckoo on the Pribyloff Islands, Alaska.

Auk, XI, No. 4, Oct., 1894, p. 325.

Mentions the capture by himself of a specimen of *Cuculus canorus telephonus* (Heine), on St. Paul's Island, Alaska.

—— Four additions to the birds of the Virginias.

Auk, XI, No. 4, Oct., 1894. pp. 333–334.

Records four species, *Acanthis linaria*, *Ammodramus caudacutus Nelsoni*, *Dendroica palmarum*, and *Helminthophila Bachmani*, new to the avifauna of the Virginias, and describes an immature specimen of the last-named species taken in King William County, Va.

PERGANDE, THEODOR. The Cotton or Melon Plant Louse (*Aphis gossypii*, Glover).

Insect Life, VII, No. 4, Mar., 1895, pp. 309–315.

Full notes are given, with a list of food plants, and a description of the species. It is shown for the first time that *Apis citrifolii*, Ashm., *A. cucumeris*, Forbes, and *A. Forbesii*, Weed are synonyms of the above-named species.

POLLARD, CHARLES LOUIS. The genus *Zenobia*, Don.

Bull. Torrey Botan. Club, XXII, May 15, 1895, p. 231.

Separates *Zenobia*, Don. from *Andromeda*, L., and recognizes two species, *Zenobia cassinefolia* (Vent.) and *Zenobia pulverulenta* (Willd.).

RATHBUN, MARY J. Notes on the crabs of the family Inachidæ in the U. S. National Museum.

Proc. U. S. Nat. Mus., XVII, No. 984, July 21, 1894, pp. 43–75.

Fifty-five species are noticed, of which eight are described as new. Two new genera and one new subspecies are also described.

—— Descriptions of a new genus and four new species of crabs from the Antillean region.

Proc. U. S. Nat. Mus., XVII, No. 986, July 21, 1894, pp. 83–86.

(An advance sheet of this paper was published Mar. 30, 1894.)

RATHBUN, RICHARD. Report on the Department of Marine Invertebrates in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 175–179.

RICHMOND, CHARLES W. A contribution to the life history of *Porzana cinereiceps*, Lawrence, with critical notes on some of its allies.

Auk, XII, No. 1, Jan., 1895, pp. 19–32.

An account of the habits of *Porzana cinereiceps*, with descriptions of the eggs, downy young, immature, and adult, followed by observations on the status of some allied species, and synonymy of *P. albigularis* and *P. cinereiceps*.

—— On the status of Bischoff's Song Sparrow (*Melospiza insignis*, Baird).

Auk, XII, No. 2, Apr. 1895, pp. 144–150.

An attempt to show that this species should be recognized as distinct from *Melospiza cinerea*. A description of the bird is given, together with series of measurements, descriptions of the eggs, and a full synonymy of both species.

—— Diagnosis of a new genus of Trogons (*Heterotrogon*), based on *Hapaloderma vittatum* of Shelley, with a description of the female of that species.

Proc. U. S. Nat. Mus., XVII, No. 1024, May 11, 1895, pp. 601–603.

A new generic name (*Heterotrogon*) is proposed for the species heretofore called *Hapaloderma vittatum*, and the female, previously unknown, is here described.

RICHMOND, CHARLES W., and KNOWLTON, FRANK HALL. Birds of south central Montana.

Auk, XI, No. 4, Oct., 1894, pp. 298–308.

An annotated list of 112 species observed during two seasons, mainly in Gallatin County, Mont.

RIDGWAY, ROBERT. Geographical, versus sexual, variation in *Oreortyx pictus*.

Auk, XI, No. 3, July, 1894, pp. 193–197, pl. VI.

The differences between *Oreortyx pictus* and *O. pictus plumiferus* are explained, and attention is directed to some erroneous statements made in the British Museum Catalogue concerning American game birds.

—— *Colinus virginianus cubanensis* not a Florida bird.

Auk, XI, No. 4, 1894, p. 324.

Explains the error through which this bird was recorded as a North American species.

—— Descriptions of twenty-two new species of birds from the Galapagos Islands.

Proc. U. S. Nat. Mus., XVII, No. 1007, Nov. 15, 1894, pp. 357–370.

The following species here described are new: *Nesomimus Bauri*, *N. bindlœi*, *N. Adamsi*, *Certhidea Salvini*, *C. bifasciata*, *C. mentalis*, *C. albemarlei*, *C. luteola*, *Geospiza Barringtoni*, *G. propinqua*, *G. Bauri*, *G. albemarlei*, *G. fratercula*, *G. debilirostris*, *G. acutirostris*, *Camarhynchus rostratus*, *C. productus*. *C. Salvini*, *C. affinis*, *Pyrocephalus carolensis*, *P. intercedens*, *P. abingdoni*. The name *Geospiza intermedia* is tentatively proposed for a species from Charles Island, supposed to be separable from *G. assimilis* (Gould). Some critical remarks are offered on *Geospiza assimilis* (Gould), and *Pyrocephalus dubius*, Gould.

—— Descriptions of some new birds from Aldabra, Assumption, and Gloriosa Islands, collected by Dr. W. L. Abbott.

Proc. U. S. Nat. Mus., XVII, No. 1008, Nov. 15, 1894, pp. 371–373.

The following species are described as new: *Zosterops aldabrensis*, *Z. madagascariensis gloriosæ*, *Cinnyris aldabrensis*, *C. Abbotti*, *Centropus insularis*, and *Caprimulgus aldabrensis*.

—— Additional notes on the native trees of the Lower Wabash Valley.

Proc. U. S. Nat. Mus., XVII, No. 1010, Jan. 26, 1895, pp. 409–421, pls. X–XV.

—— Report on the Department of Birds in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 147–152.

RILEY, CHARLES VALENTINE. Bees.

Insect Life, VI, No. 5, Sept., 1894, pp. 350–360, figs. 23–25.

RILEY, CHARLES VALENTINE—Cont'd.

This paper gives an account of the habits of bees, especially the honey bee, the more important special organs, and the species of the genus *Apis* and variations in *Apis mellifica*.

—— The senses of insects.

Insect Life, VII, No. 1, Sept., 1894, pp. 33–41, figs. 10–14.

—— Notes upon *Belostoma* and *Benacus*.

Proc. Ent. Soc. Wash., III, No. 2, Jan. 8, 1895, pp. 83–86, figs. 4–5.

Gives the structural characters of the genera mentioned.

—— The eggs of *Ceresa bubalus*, Fab. and those of *C. taurina*, Fitch.

Proc. Ent. Soc. Wash., III, No. 2, Jan. 8, 1895, pp. 88–92, figs. 6–11.

—— Notes from California: Results of Mr. Koebele's second mission to Australia.

Proc. Ent. Soc. Wash., III, No. 4, June 22, 1895, pp. 250–252.

Expresses the opinion that the predaceous insects introduced by Mr. Koebele on his second trip to Australia will not prove a success in exterminating California scale-insects.

—— On oviposition in the Cynipidæ.

Proc. Ent. Soc. Wash., III, No. 4, June 22, 1895, pp. 254–273.

A review of the observations of Adler and Hartig on the oviposition of the Cynipidæ, with an account of observations of his own which indicated that the oviposition in this family follows no uniform system.

—— Report on the Department of Insects in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 171–174.

RILEY, CHARLES VALENTINE, ASHMEAD, WILLIAM H., and HOWARD, LELAND O. Report upon the parasitic Hymenoptera of the island of St. Vincent.

Journ. Linn. Soc., Zoology, XXV, 1894, Nos. 159–160, pp. 56–254.

This paper, which was read June 29, 1893, embraces the following sections: (*a*) Introduction by C. V. Riley, with list of previously described parasitic Hymenoptera found in St. Vincent (pp. 56–61); (*b*) report on the parasitic Cynipidæ, by W. H. Ashmead (pp. 61–78), including synoptic tables of the species of 4 genera and describing 24 new species; (*c*) report on part of the Chalcididæ, by L. O. Howard (pp. 79–108), describing 4 new genera and 33 new species, redescribing more fully some previously known genera and species, and giving synoptic tables of the species of 2 genera; (*d*) report on part of the Braconidæ

RILEY, CHARLES VALENTINE, ETC.—Continued.

by W. H. Ashmead (pp. 108-138), giving synoptic tables of the species of 5 genera and describing 56 new species; (*e*) report on the Ichneumonidæ, by W. H. Ashmead (pp. 138-143), describing 10 new species; (*f*) report on part of the Chalcididæ, by W. H. Ashmead (pp. 143-188), giving synoptic tables of the species of 12 genera and describing 5 new genera and 72 new species; (*g*) report on the Proctotrypidæ, by W. H. Ashmead (pp. 188-254), giving synoptic tables of the genera of the tribe Scelionini and of the species of 24 genera, and describing 105 new species.

ROBERTS, CHRISTOPHER H. The species of *Dineutes* of America north of Mexico.

Trans. Am. Ent. Soc., XXII, No. 3, July, 1895, pp. 279-288, pls. V, VI.

Twelve species are recognized and carefully described, of which three are new. New sexual characters are observed in the front legs.

ROBINSON, WIRT. A Flying Trip to the Tropics. | A Record of an Ornithological Visit | to the | United States of Colombia, South America | and to the Island of Curaçao, | West Indies, | in the year 1892. | By Wirt Robinson | Second Lieutenant, Fourth U. S. Artillery. | Cambridge | Printed at the Riverside Press | 1895. |

8-vo., pp. i-x, 1-194, with 108 illustrations.

An account, in the form of a journal of a trip to Colombia, and to the island of Curaçao, lasting fifty-four days. Much attention was directed to natural history, especially to birds. An annotated list of 91 species of birds observed in Colombia, and an additional list of 38 species of hummingbirds from Bogota are given; also a list, with notes, of 23 species observed on the island of Curaçao. Full bibliographies of works relating to Colombia and to Curaçao are appended, and lists of maps and zoological papers and works. Many illustrations are given in the text, and the following birds are illustrated by colored plates: *Ramphastos citreolæmus*, *Psittacula perspicillata*, *Eupsychortyx leucotis*, *and Icterus xanthornus curasoensis*.

ROSE, JOSEPH NELSON. Some notes upon the tree Ipomoeas of Mexico.

Garden and Forest, VII, Sept. 12, 1894, p. 367, pls. 58, 59.

Ipomoea intrapilosa and *Ipomoea Wolcottiana* are described as new.

—— Report upon a collection of plants made in the States of Colima and Sonora, Mexico, by Edward Palmer, in the years 1890 and 1891.

Contrib. U. S. Nat. Herbarium., I, No. 9, Jan. 31, 1895, pp. 293-434, pls. 24-35, figs. 1-10, frontispiece.

ROSE, JOSEPH NELSON—Continued.

This paper is based upon a collection of plants made by Dr. Palmer in western Mexico in the years 1890 and 1891. Over 50 species are described as new.

—— A blue water lily from Mexico.

Garden and Forest, VIII, May 22, 1895, p. 205, fig. 31.

Castalia elegans is here described and figured.

(See also under JOHN M. COULTER.)

SCUDDER, SAMUEL H. The Cranberry Girdler (*Crambus topiarius*, Zell.).

Insect Life, VII, No. 1, Sept. 1894, pp. 1-5, fig. 1.

An account of the damage done by the larvæ of this moth to cranberry meadows at Plymouth, Mass.

SHUFELDT, ROBERT W. Lectures on biology. [Read before the Catholic University of America.] No. 1 (continued).

Am. Field, XLII, No. 1, New York and Chicago, Saturday, July 7, 1894, pp. 6-8.

—— Lectures on biology. No. 2. Its relation to geology.

Am. Field, XLII, No. 2, July 14, 1894, pp. 31-32.

—— Lectures on biology. No. 2 (continued). Its relation to geology.

Am. Field, XLII, No. 3, July 21, 1894, pp. 55-56.

—— Lectures on biology. No. 3. Its value as a study.

Am. Field, XLII, No. 4, New York and Chicago, Saturday, July 28, 1894, pp. 78-79.

—— On cases of complete fibulæ in existing birds.

Ibis, VI, No. 23 London, July, 1894, article XXIX, pp. 361-366, figs. 1, 2

A review of the literature upon the subject, and adding two apparently new cases of a complete fibula in birds; the one being *Plotus anhinga*, and the other *Sula piscator*. Fig. 1 represents, natural size, the right tibio-tarsus and fibula of *Plotus anhinga*, and fig. 2 the corresponding bones as found in a skeleton of *Sula piscator*. These specimens are in the U. S. National Museum, and exhibit very clearly the condition described.

—— On the affinities of the Steganopodes.

Proc. Zool. Soc. Lond., Feb. 20, 1894, published July, 1894, pp. 160-162.

The affinities here suggested are based upon a study of all the skeletons of Steganopodous birds in the collections of the U. S. National Museum, as well as those in the private cabinet of the author. Many comparisons are made with related groups. The present brief paper is simply an abstract made from the original MSS. and giving the taxonomic scheme for the group.

SHUFELDT, ROBERT W. [Editorial on] The Water Ouzel or Dipper. By E. N. Lowe.

Great Divide, XI, No. 7, Denver, Colo., July, 1894, p. 176.

The figure of "The American Dipper" is by Dr. Shufeldt, being a copy of the one given by Baird, Brewer, and Ridgway in their "History of North American Birds." A brief description of the bird, its nest, and its habits are given, and the author's former opinion as to its affinities are restated, to the effect that in so far as anatomical structure seems to indicate, the nearest American ally of *Cinclus* is the Oven bird (*Siurus*).

—— The American Barn Owl. Some peculiar nesting sites.

Great Divide, XI, No. 7, July, 1894, pp. 176–177. One figure in text.

Points out that neither Audubon or Wilson described the breeding habits of this owl (*Strix pratincola*), but that this has been very fully done by more recent writers. Gives instances of their breeding in burrows in the ground, and also the case cited by Bendire from the account of Mr. Emerson, of Haywards, Cal., where a pair of these owls laid twenty-four eggs on the tin roof of a house, where, completely unprotected, they spoiled. An excellent and reduced copy of Brehm's figure of this bird is presented.

—— [Review of] Bird-nesting in Northwest Canada. By Walter Raine. Illustrated. Hunter, Rose & Co., Toronto: 1892.

Auk, XI, No. 3, New York, July, 1894, pp. 247-248.

An adverse view of the work of a now notorious swindler in his traffic with museums and collectors of the eggs of birds, especially those of North America. The book is full of errors, and apparently was written to give scientific coloring to the unprincipled dealings of its author.

Many of the misstatements in the volume were detected by studies of the unrivaled collection of eggs of the birds of this country in the U. S. National Museum.

—— Lectures on biology. No. 3 (continued). Its value as a study.

Am. Field, XLII, No. 5, New York and Chicago, Saturday, Aug. 4, 1894, pp. 104–105.

—— Lectures on biology. No. 3 (continued). Its value as a study.

Am. Field, XLII, No. 6, New York and Chicago, Saturday, Aug. 11, 1894, pp. 128–129.

—— Lectures on biology. No. 4. Its growth and future influence.

Am. Field, No. 7, New York and Chicago, Saturday, Aug. 18, 1894, pp. 151-153.

SHUFELDT, ROBERT W. Lectures on biology. No. 4 (continued). Its growth and future influence.

Am. Field, No. 8, New York and Chicago, Saturday, Aug. 25, 1894, pp. 177–178.

This lecture concludes the series. The lectures were subsequently printed in full, with a historical "Preface."

—— On the osteology of Cranes, Rails, etc.

pp. 1, 2, Aug., 1894.

Reprinted from Proc. Zool. Soc. Lond., Mar. 20, 1894, pp. 250–251.

This is simply a brief abstract from the author's original MSS. giving an account of the osteology and affinities of this group of birds. It is based upon a study of the material in his private collection and also that of the U. S. National Museum.

A scheme of classification is presented that divides the suborder Paludicolæ primarily into two superfamilies, viz: the Gruoidea and the Ralloidea. The first named contains the family Gruidæ, represented by the genus *Grus;* and the family Aramidæ by *Aramus*. The Ralloidea, with the single family Rallidæ, is made to contain the genera *Rallus*, *Crex*, *Porzana*, *Ionornis*, *Gallinula*, and *Fulica*.

—— Giants among Woodpeckers.

Great Divide, X, No. 8, Aug., 1894, p. 189. One figure in text.

A brief account of the Ivory-billed Woodpecker, calling attention to the fact that by the misinformed the Pileated Woodpecker is frequently mistaken for the Ivory-billed, in those parts of the country where both species occur together. A good copy of Brehm's figure of the bird illustrates this article.

—— The introduction of birds.

Great Divide, XI, No. 8, Denver, Colo., Aug., 1894, p. 189. One figure in text.

Gives a brief and popular account of many of the birds that have been introduced into the United States from foreign countries, and invites especial attention to the introduction of the Capercally, of which species a figure of the cock and hen illustrates the article. Mounted specimens of this bird are to be found in the exhibition series of the Museum, and these were made use of in describing the appearance of the two sexes.

—— Notes on some western animals.

Great Divide, XI, No. 9, Chicago, Sept., 1894, pp. 218–219.

Makes brief reference to quite a number of western mammals and birds, describing their habits and geographical range. Figures are given of the Round-tailed Muskrat (*Neofiber Alleni*), after True's drawing in the Proceedings U. S. National Museum; of the Woodchuck (*A. monax*); and of the Canada Porcupine (*E d. dorsatus*).

SHUFELDT, ROBERT W. Notes on the Steganopodes, and on fossil birds' eggs.

Auk, XI, No. 4, New York, Oct., 1894, pp. 337–339.

Presents a scheme of classification for the Suborder Steganopodes, based upon a study of the osteological material representing that group in the author's collection, and in the collections of the U. S. National Museum. The article is but an abstract from original MSS.

Reference is also made in this article to such specimens of fossil eggs of birds as have come to the notice of the author, as those in the collection of the U. S. National Museum, and also those described by M. Alp. Milne-Edwards and others.

—— On the osteology of certain Cranes, Rails, and their allies, with remarks upon their affinities.

Journal of Anatomy and Physiology, XXIX (New series), IX, pt. 1, London, Oct., 1894, article 5, pp. 21–43. Three figures.

This paper is an extensive and illustrated abstract from the author's unpublished MSS. It is based upon the osteological material in the collections of the U. S. National Museum, and in his private cabinet, and such other material as has been lent by the British Museum and British naturalists. A history of the various proposed classifications of the group (*Paludicolæ*) is presented; also a synopsis of the osteological characters of *Rallus*, *Aramus*, and *Grus* is given. Figures of the lateral views of the skulls of a *Rallus*, of *Aramus giganteus*, and of a *Grus* are also given.

—— Deep-sea fishes.

Great Divide, XI, No. 10, Chicago, Oct., 1894, pp. 240–241. Five figures in text.

A popular account of deep-sea fishing in various parts of the world, with descriptions of many deep-sea forms. References are made to the publications upon this subject by the U. S. National Museum, and to the work accomplished by the U. S. Fish Commission and by British Naturalists in the Indian Ocean. The Torch-fish (*Linophryne lucifer*) is figured, as are also five of the deep-sea fishes of India (after Alcock) viz: *Neobythites steatiticus*, *Odontostomus atratus*, *Bathypercis platyrhynchus*, and *Physiculus argyropastus*.

—— The seventeen-year Cicada and some of its allies.

Popular Science News, XXVIII, No. 10, New York, Oct., 1894, pp. 154–155, with figures.

A somewhat extended account of the natural history of the Cicadidæ based upon personal observations of the author, upon the collections in the Department of Entomology in the U. S. National Museum, and the writings of Riley, Packard, Kirby, and others. Numerous figures are given of *Cicada septendecim*, *C. pruinosa*, and *Thopha saccata* of Australia.

SHUFELDT, ROBERT W.—Continued.

Figures of the eggs and metamorphoses of these insects are also presented, together with a drawing of the twig of a tree showing the peculiar puncturing done by Cicadas.

—— On the affinities of the Steganopodes: A correction.

Proc. Zool. Soc. London, Nov. 6, 1894, p. 608.

Makes a correction in the taxonomic scheme proposed by the author for the Steganopodes in the Proceedings of the Zoological Society for 1894, p. 160. As corrected, the author is of the opinion that the suborder Steganopodes is divisible into three superfamilies, viz, the Pelecanoidea, the Phaëthontoidea, and the Fregatoidea. In the first superfamily are arrayed the families Pelecanidæ, Phalacrocoracidæ, Anhingidæ, and Sulidæ; in the second, the Phaëthontidæ; and in the last the Fregatidæ.

—— Pelicans.

Popular Science News, XXVIII, No. 11, New York, Nov., 1894, pp. 165–166. One figure.

This is a brief account of the natural history of several species of Pelicans and their allies in various parts of the world. Reference is also made to the mythical legends about these birds, and to such fossil Pelicans as have been described by the author and others. The article is illustrated by a good figure of the Brown Pelican drawn by Dr. Shufeldt from the large painting of that species by Audubon.

—— King snakes.

Observer, V, No. 11, Portland, Conn., Nov., 1894, pp. 328–329. One figure.

Contains brief references to the various species of King Snakes (*Ophibolus*) of the United States, as represented in the collections of the U. S. National Museum, and described in its publications.

A figure of a young king snake, *Ophibolus g. getulus* is given. (From a photograph by the author; natural size.)

—— The photography of birds.

Great Divide, XI, No. 11, Chicago, Nov., 1894, pp. 263–264. Three figures.

Good photographs of living specimens of wild and domestic animals of all kinds, as well as the various structures they build for their habitation and the rearing of their young, have proved of very great service to naturalists, taxidermists, and many others. In the present contribution Dr. Shufeldt deals with the subject of the photography of birds, the methods employed, and some of the many difficulties to be overcome. Half-tone figures of living specimens of the Screech Owl (*Megascops*), the Great Horned Owl (*Bubo*), and Gambel's Partridge (*Calipepla*) illustrate the article. The last named was taken at the U. S. National Museum.

—— Storks.

Nidologist, II, No. 4, Alameda, Cal., Dec., 1894, pp. 45–47. Three figures in text.

SHUFELDT, ROBERT W.—Continued.

Three half-tone figures illustrate this article, being reproductions of photographs of the Common White Stork of Europe (*Ciconia alba*). The most interesting one of these gives a Stork in full flight the moment it quits its nest, while the other two show them in different attitudes. Brief popular accounts are given of various species of storks found in different parts of the world, and several legends in regard to some of them are also referred to.

—— Grebes.

Popular Science News, XIX, No. 1, New York, Jan., 1895, pp. 3–4.

This is a popular account of the birds called Grebes, and their allies, based upon the author's extended scientific work in the group, in which latter the collections of the U. S. National Museum have been very extensively used. It gives the classification and relationships of the *Pygopodes*, and makes constant reference to those occurring in the United States and elsewhere, as well as the probable origin of the Loons and Grebes in time. Of this it is pointed out that they are the descendants of a now extinct ancestral stock of birds, from which those remarkable fossil forms of toothed divers of the Cretaceous beds of Kansas, described by Marsh—the Hesperornithidæ—were an offshoot. The article is illustrated by a half-tone of the author, and figures of the Horned Grebe, drawn by Dr. Shufeldt after Audubon.

—— [Letter to Editor. Reply to Professor Coe.]

Popular Science News, XXIX, No. 1, New York, Jan., 1895, p. 7.

Sustains the opinion of Dr. Günther, of the British Museum, in that the Rattlesnake (*Crotalus*) is incapable of sounding its rattle when from any reason the interspaces between the several individual rattles are filled with water. This fact has been noted at the Zoological Gardens of London in the case of these reptiles. Professor Coe holds a contrary opinion, based upon personal observation and experiments with rattles taken from the snakes.

—— The Loons.

Popular Science News, XXIX, No. 2, New York, Feb., 1895, pp. 17–18. One figure in text.

A popular description of the Loons of the United States, their habits, plumage, and geographical ranges, much of the information being derived from the specimens contained in the collections of the U. S. National Museum. Reference is made to the rarity of the Black-throated Diver in the latter, of which species there are no skins in the collection, and only a few mounted examples.

A figure of *Urinator arcticus* is given, drawn from one of these specimens.

SHUFELDT, ROBERT W. Beauty from an Indian's point of view.

Cosmopolitan, VIII, No. 5, New York, Mar., 1895, pp. 591–598. Nine figures in text.

In this contribution the question of the estimation of female beauty in several of the tribes of North American Indians is dealt with. Descriptions, comparisons, and the reproductions from photographs of a number of women considered to be belles in the several tribes to which they belong are given. Among these are to be noted selections from the Lagunas, the Navajoes, the Zuñians, the Apaches, the Yumas, the Moquis, and the Mojaves.

To these descriptions (anatomical, anthropological, and otherwise), are added accounts of the various kinds of dress and trinkets worn by these women as a matter of personal adornment.

—— Auks and their allies.

Popular Science News, XXIX, No. 3, New York, Mar., 1895, pp. 33–34, with figures.

A great many of the skins and mounted specimens, as well as all the osteological material representing this group of birds in the collections of the U. S. National Museum, have been extensively studied by the author. Much of this has already been published, while still more remains in MSS. It is upon this that the present popular article is based. The article is illustrated with drawings by Dr. Shufeldt, such as the Whiskered Auklet (after Ridgway), and the Great Auk. The latter was loaned by the Century Company, the original having appeared in The Century Magazine, where it illustrated another article by the author (Jan., 1886).

—— On a method of modeling certain invertebrata for museum exhibition.

Journ. Institute Jamaica, XI, No. 2, Kingston, Jamaica, Apr., 1895, pp. 170–172.

Presents a fairly complete account of the methods employed at the U. S. National Museum to preserve and mount various forms of invertebrates, both marine and terrestrial. The modeling of an *Octopus* is given as an example, and the material used in making gelatin casts is likewise described, and its formula presented.

Reference is also made to the mode of preparing models from zoological figures and photographs of the specimens.

—— Some Fort Wingate reminiscences. New Mexico.

Nidologist, II, No. 8, New York, Apr., 1895, pp. 102–105. Two plates.

In 1888-89 the author was stationed, as post surgeon, at Fort Wingate, N. Mex., and during the latter part of this period he passed through the ordeal of a military court-martial, one of the most famous in the history of this country. It practically tested the question as to whether or not an officer on duty could avail himself of his spare time for the purpose of scientific investigation.

SHUFELDT, ROBERT W.—Continued.

A varied collection was made at Wingate by Dr. Shufeldt for the U. S. National Museum, but the most of his time was given over to the publication of his researches, the whole representing several volumes. A portion of this was published by the Museum, while the major part of it appeared in London. A fine plate of the "Navajo church," as well as one of the author's study at Wingate, illustrates the contribution.

—— Some of the "Outliers" among birds.

Popular Science Monthly, XLVI, No. 6, New York, Apr., 1895, pp. 760–780. Ten figures in text.

Numerous types of birds still puzzle avian taxonomers, and no unanimity of opinion yet exists as to their affinities. Examples of these may be seen in such forms as the Sun Bittern (*Eurypyga*) and others.

In the present article nearly all of these puzzling species are described and figured, and the various opinions held by ornithologists upon their kinships are given in greater or less detail. In his studies of these "outlying types" Dr. Shufeldt made very extensive use of the collections of the U. S. National Museum.

—— Modern taxidermy.

Am. Field, XLVII, No. 20, New York and Chicago, Saturday, May 18, 1895, pp. 463–464, with two figures in text; No. 21, May 25, pp. 488–490, with six figures in text.

Popular articles based upon the author's well-known report upon "Scientific Taxidermy for Museums," published by the U. S. National Museum. The half-tones illustrating these articles were made by the American Field Publishing Company direct from the original photographs taken at the Museum, and they constitute a very useful series of zoological figures.

—— Gulls and their allies.

Popular Science News, XXIX, No. 5, New York, May, 1895, pp. 65–66, with figures.

Partly scientific in character, this popular account is based upon the author's studies of all the osteological and other material in the collections of the U. S. National Museum, and his private cabinet, illustrating the group of birds known as the Longipennes and their allies. The major portion of these researches are in MSS. and ready for publication, with numerous original figures.

The present article is illustrated by a good electro cut of Ross's Gull (adult male and young female), redrawn by the author from J. H. Ridgway's colored plates in the Report of the International Polar Expedition to Point Barrow, Alaska, by Lieut. P. H. Ray, U. S. A.

—— [Review of] A Handbook of the Birds of Eastern North America. By Frank M. Chapman. New York, D.

SHUFELDT, ROBERT W.—Continued.

Appleton & Co., 1895. 12 mo, pp. 1–420, with plates and text figures.

Nidologist, II, No. 9, New York, May, 1895, pp. 127–128.

In general, a very favorable notice of the work, the principal exceptions being that its author is taken to task for not employing the metric system for the purposes of measurement; and secondly, that he perpetuates some very antiquated notions in regard to the classification of some of the groups of birds. For example, Mr. Chapman retains the Flamingoes in an *order* by themselves, and yet places the American Vultures (Cathartidæ) as a *family* in the order Raptores, in total disregard of what is now known of the structure of these several forms.

—— Some famous butterflies.

Great Divide, XII, No. 5, Chicago, May, 1895, pp. 104–105, with figures.

Contains more or less full descriptions of the "dead-leaf butterflies" of Java (*Kallima paralekta*) and its peculiar habits, and also the related species *K. inachis*, the first named being figured. Brief accounts are given also of several South American forms, as *Dynastor napoleon*, *Euptychia tricolor*, *Perisama euriclea*, and others. The species last mentioned are figured, as well as *Leptocircus curious*. Reference is made by the author to some of the American butterflies collected by him in New Orleans and now forming a part of the Museum collection.

—— [Review of] The pterylography of certain American Goatsuckers and Owls. By Hubert Lyman Clark. *Proc. U. S. Nat. Mus.*, XVII, 1894, pp. 551–572, figs. 1–11.

Nidologist, II, No. 10, New York, June 1895.

A favorable notice of a brief but none the less important contribution to the pterylography of North American birds.

After a careful study of the pteryloses of a sufficient number of Owls and Goatsuckers, Mr Clark naturally comes to the conclusion "that the Caprimulgi are related to Striges, and not very distantly either—probably a branch from the early part of the Strigine stem," an opinion in which his reviewer most fully concurs.

—— Lectures on biology.

pp. I–III, 1–102.

Reprinted from the American Field, XLI, No. 26, to XLII, No. 8.

These are the biological lectures given in full, as they were delivered at the Catholic University of America by Dr. Shufeldt (together with a historical preface), during the month of January, 1892. The entire field of biology is reviewed with greater or less thoroughness, and as many biological laws conflict with the dogmas entertained by the Church of

SHUFELDT, ROBERT W.—Continued.

Rome, these lectures met with very marked disfavor from such quarters. Through the operation of Catholic influence it was found impossible for the author to print them, either in Europe or America, until two years after their delivery, and the reasons therefor are set forth in the preface. Not a few references are made to the work accomplished by the U. S. National Museum and to its collections.

—— [Article on the Mocking Bird.]

Dictionary of Birds. By Alfred Newton, assisted by Hans Gadow, with contributions from Richard Lydekker, B. A., F. R. S., Charles S. Roy, M. A., F. R. S., and Robert W. Shufeldt, M. D. (late U. S. Army). Pt III. London, 1894, pp. 582–585.

A life history of *Mimus polyglottus*, contributed to Newton's Dictionary of Birds, and one that has been very favorably spoken of by not a few British ornithologists, notwithstanding the fact that its author says: "To compare him with his only rival, the European Nightingale, seems to me quite out of place, though I will say that my faith in the powers of the Mocking-bird is so firm, that I believe were he successfully introduced into those countries where the Nightingale flourishes, that princely performer might some day wince as he was obliged to listen to his own most powerful strains poured forth with all their native purity by this king of feathered mockers, the subject of the present notice."

SIMPSON, CHARLES TORREY. Types of *Anodonta dejecta* rediscovered.

Nautilus, VIII, No. 5, Sept., 1894, pp. 52–53.

The types of *Anodonta dejecta*, Lewis, which were in the National Museum collection, were rediscovered by the writer in examining some duplicate material, and prove to be the same as his *A. Mearnsiana* from the Pacific drainage. The locality, "head of Arkansas River," given for Lewis's types is no doubt erroneous.

—— Patella (Helcioniscus) nigrisquamata, Rve.

Nautilus, VIII, No. 8, Dec., 1894, pp. 91–92.

The writer shows that the shell named *Patella boninensis* by Pilsbry is only an adult form of *P. nigrisquamata*, named long ago by Reeve.

—— Distribution of the land and fresh-water mollusks of the West Indian region and their evidence with regard to past changes of land and sea.

Proc. U. S. Nat. Mus., XVII, No. 1011, Jan. 26, 1895, pp. 425–450, pl. XVI, figs. 1–8.

In this paper some account is given of the means of distribution of land and fresh-water snails. The theory is advanced that the land-snail fauna of the Greater Antilles is ancient and has developed on the islands, which formerly were more elevated and united together as well as to Middle America, and, by way of the Bahamas, to South Florida; that a subsidence separated the islands from each other and from Middle America, leaving only the summits of the mountains above the sea, and that they have since, during a period of uplifting, reached their present elevation; that the land-snail fauna of the Lesser Antilles is closely related to that of South America, and that there is no evidence that the Lesser Antilles have ever been united to the Greater Antilles. These deductions are drawn largely from biological evidence.

SIMPSON, CHARLES TORREY—Cont'd.

—— Note on *Unio oregonensis*, Lea.

Nautilus, VIII, No. 10, Feb., 1895, pp. 116–118.

The four type specimens of *U. oregonensis*, Lea are the only ones known, and the writer, in carefully comparing them with other species, discovered that they were identical with the forms which Lea had named *Unio Rowelli* and *Unio McNeili* from Central America. The locality of *U. oregonensis* (Oregon) is undoubtedly erroneous.

—— *Unio ochraceus* and *U. cariosus*.

Nautilus, VIII, No. 11, Mar., 1895, pp. 121–123. Two wood cuts.

In this paper an attempt is made to point out the differences between the closely related *U. cariosus* and *U. ochraceus*, and to show that both are valid species.

SMITH, JOHN B. Smithsonian Institution. | United States National Museum. | — | Bulletin | of the | United States National Museum. | No. 48. Contribution toward a Monograph of the Insects | of the Lepidopterous Family Noctuidæ of | Boreal North America.—A Revision | of the Deltoid Moths. | By | John B. Smith, Sc. D., Professor of Entomology in Rutgers College. | — | Washington: | Government Printing Office. | 1895.

8vo, pp. 1–129, pls. I–XIV.

The introduction (pp. 1–13) discusses the systematic position of the group and its components. They are divided into three tribes: Helliini, Hermiini, and Hyphenini, and a synopsis of the 19 genera is given (pp. 13–14). The genera *Pseudorgyia* and *Rivula* are excluded from the Deltoids. The main part of the work (pp. 15–118) gives complete descriptions of the genera and species, with full synonymy, synoptic tables, and geographical distribution. Seventy-three species are recognized as valid (listed on pp. 119–120), of which eight are described as new. Pls. I–IX give excellent photo-engravings of all species, and pls. X–XIV illustrate structural characters.

STEARNS, ROBERT E. C. The shells of the Tres Marias and other localities

STEARNS, ROBERT E. C.—Continued.
along the shores of Lower California and the Gulf of California.

Proc. U. S. Nat. Mus., XVII, No. 996, July 19, 1894, pp. 139-204.

—— *Helix (Arionta) coloradoensis:* A new locality.

Nautilus, VIII, No. 3, July, 1894, p. 29.

In this paper Dr. Stearns reports this recently described species from Mountain Springs, Colorado Desert, San Diego, Cal.

—— A new variety of *Ocinebra circumtexta*, Stearns.

Nautilus, IX, No. 2, June, 1895, p. 16.

Dr. Stearns calls attention to a variety of a pale orange color, with bandings of deeper orange. He has named it var. *aurantia*.

STEJNEGER, LEONHARD. Notes on a Japanese species of Reed Warbler.

Proc. U. S. Nat. Mus., XVII, No. 997, July 21, 1894, pp. 205-206.

Attention is called to the fact that a Reed Warbler recently named *Locustella hondoensis* by the author had been previously described as *Locustella pleskei* by Taczanowski, whose name has precedence over the former. A synonymy of the species is added.

—— Description of *Uta Mearnsi*, a new lizard from California.

Proc. U. S. Nat. Mus., XVII, No. 1020, Nov. 30, 1894, pp. 589-591.

—— Arctic notes on the habits of certain rare northern birds in Commander Islands and Kamtchatka.

Museum, I, No. 2, Dec., 1894, pp. 53-58; No. 3, Jan., 1895. pp. 85-87; No. 4, Feb., 1895, pp. 101-102.

Editorial abstracts from Bulletin No. 29, U. S. National Museum.

—— Notes on Butler's Garter Snake.

Proc. U. S. Nat. Mus., XVII, No. 1021, May 11, 1895, pp. 593-594.

Notes on a second specimen of *Thamnophis Butleri*.

—— On the specific name of the Coachwhip Snake.

Proc. U. S. Nat. Mus., XVII, No. 1022, May 11, 1895, pp. 595-596.

The correct specific name is shown to be *Bascanion flagellum*.

—— Description of a new Salamander from Arkansas, with notes on *Ambystoma annulatum*.

Proc. U. S. Nat. Mus., XVI, No. 1023, May 11, 1895, pp. 597-599.

Desmognathus Brimleyorum is described as a new species.

STEJNEGER, LEONHARD. Report on the Department of Reptiles and Batrachians in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.,) 1892 (1893), pp. 155-157.

STILES, CHARLES WARDELL. Notes on parasites.

Veterinary Journal (London), XXXIX, No. 230, Aug., 1894, pp. 107-110, figs. 1-4.

Reprinted from Johns Hopkins Hospital Bulletin, No. 40, May, 1894, pp. 57-58 (Notes on Parasites—26: *Distoma (Mesogonimus) Westermanni*. Discovery of a Parasite of Man, new to the United States).

—— The anatomy of the large American Fluke (*Fasciola magna*), and a comparison with other species of the genus *Fasciola*, s. st. (containing also a list of the chief epizootics of *Fascioliasis* (Diatomatosis), and a Bibliography of *Fasciola hepatica*, by Albert Hassall.

Journ. Comp. Med. and Vet. Arch., XV, No. 5, Oct., 1894, pp. 299-313; No. 6, Nov., 1894, pp. 407-417; No. 7, Dec., 1894, pp. 457-462; XVI, No. 3, Mar., 1895, pp. 139-147; No. 4, Apr., 1895, pp. 213-222; No. 5, May, 1895, pp. 277-282. Eight plates.

The first parts of this article appeared in the same journal.

—— Notes on parasites—27. Experimental Trichinosis in *Spermophilus 13-lineatus*.

Centralb. f. Bakteriol. u. Parasitenk., XVI, No. 19, Nov. 3, 1894, pp. 777-778.

Reprinted in the Veterinary Magazine, I, No. 11, Nov., 1894, pp. 727-728.

—— Notes on parasites—28. New American finds of Sarcosporidia.

Veterinary Magazine, I, No. 11, Nov., 1894, pp. 728-729.

Abstracted as "Nouvelles espèces américaines de Sarcosporidies" (Résumé), Bull. Soc. Zool. de France, XIX, (séance du 11 Déc.), 1894, p. 160.

—— Notes sur les parasites—31. Une phase précoce des Ténias du lapin (notice préliminaire).

Bull. Soc. Zool. de France, XIX (séance du 11 Déc.) 1894, pp. 163-165.

Translated as "Notes on parasites—31. An early stage of rabbit tapeworm," Veterinary Magazine, II, No. 1, Jan., 1895, pp. 32-33.

—— Notes on parasites—35. Errata to notes 21, 28, 29 and 30.

Veterinary Magazine, II, No. 1, Jan., 1895, pp. 33-34.

Abstract in Bull. Soc. Zool. de France, XX, No. 2, Feb., 1895, p. 31.

STILES, CHARLES WARDELL. Notes on parasites—33. On the identity of *Tænia Brandti*, Cholodkowsky, 1894, with *Tænia Giardi*, Moniez, 1879, and *Tænia ovilla*, Rivolta, 1878.

Centralb. f. Bakteriol. u. Parasitenk., I. Abt., XVII, Nos. 7–8, Feb. 28, 1895, pp. 254–256.

Reprinted in the Veterinary Magazine, II, No. 4, Apr., 1895, pp. 217–220.

—— Notes on parasites—34. On the presence of adult Cestodes in hogs.

Centralb. f. Bakteriol. u. Parasitenk., I. Abt., XVII, Nos. 7–8, Feb. 28, 1895, pp. 256–257.

Reprinted in the Veterinary Magazine, II, No. 4, Apr., 1895, pp. 220–222.

—— Notes on parasites—36. A double-pored Cestode, with occasional single pores.

Centralb. f. Bakteriol. u. Parasitenk., I. Abt., XVII, Nos. 13–14, Apr. 16, 1895, pp. 457–459. One figure.

Reprinted in the Veterinary Magazine, II, No. 4, April, 1895, pp. 222–225.

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Veterinary Magazine, II, No. 4, Apr., 1895, pp. 225–228.

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Translated as "Notes on Parasites—32. On the rarity of *Tænia solium* in North America." Veterinary Magazine, II, No. 5, May, 1895, pp. 281–286.

—— Notes on parasites—38. Preliminary note to "A revision of the adult Leporine Cestodes."

Veterinary Magazine, II, No. 6, June, 1895, pp. 341–346.

—— Notes on parasites—39. *Pyrosoma*, *Apiosoma*, and *Piroplasma*.

Veterinary Magazine, II, No. 6, June, 1895, p. 346.

Translated as "Bemerkungen über Parasiten—39. *Pyrosoma*, *Apiosoma* und *Piroplasma*, Gattungsnamen des Texasfieberparasiten." Centralbl. f. Bakteriol. u. Parasitenk., I. Abt., XVIII, No. 9–10, 1895, p. 282–283.

—— Report on a parasitic Protozoan observed on the fish in the aquarium.

Bull. U. S. Fish Com., 1893 (1894), pp. 173–190, pls. 11, 12.

STILES, CHARLES WARDELL—Cont'd.

Summary translated by René Paratre in Bull. Soc. Cent. d'Aquiculture de France, 2d sér., VI, Nos. 7–9, July–September, 1894, pp. 165–167, pl. I.

STILES, CHARLES WARDELL, and HASSALL, ALBERT. Notes on parasites—29. A new species of intestinal fluke in the Cotton-tail Rabbit (*Lepus sylvaticus*, Bachman) and in the Northern Hare (*L. americanus*, Erxleben).

Veterinary Magazine, I, No. 11, Nov., 1894, pp. 729–737. Eight figures

The "Summary" (pp. 736–737) appeared as "Notes sur les Parasites—29. Nouvelle espèce de Douve intestinale (*Distomum tricolor*) chez le Lapin à queue cottonneuse (*Lepus sylvaticus* Bachman) et chez le Lièvre du Nord (*Lepus americanus* Erxleben)" (Résumé), Bull. Soc. Zool. de France, XIX (séance du 11 Déc.), 1894. pp. 160–162, fig. 1.

—— Notes on parasites—30. *Distoma* (*Polyorchis*) *molle* (Leidy, 1856) S. and H., 1894.

Veterinary Magazine, I, No. 11, Nov., 1894, pp. 737–742. Three figures.

The "Summary" appeared as "Notes sur les Parasites—30. *Distomum* (*Polyorchis*), *molle* (Leidy, 1858 [read 1856]), (Wardell, Stiles, et Hassall, 1894)," (Résumé), Bull. Soc. zool. de France, XIX (séance du 11 Déc.), 1894, pp. 162–163, fig. 2.

STONE, WITMER. The | Birds of Eastern Pennsylvania | and | New Jersey, | with Introductory Chapters on | Geographical Distribution and Migration. | Prepared under the direction of the | Delaware Valley Ornithological Club. | By | Witmer Stone, | Conservator Ornithological Section Academy of Sciences of Philadelphia, | — | Philadelphia. | Delaware Valley Ornithological Club. | 1894.

8vo, pp. i–vii, 1–185, frontispiece and two maps.

An annotated list of 349 species of birds ascertained to occur within the limits of eastern Pennsylvania and New Jersey, preceded by chapters devoted to "Geographical Distribution of Birds" and "Bird Migration." A full bibliography is added.

TAYLOR, W. E. The Box Tortoises of North America.

Proc. U. S. Nat. Mus., XVII, No. 1019, May 11, 1895, pp. 573–588, figs. 1–7.

TOWNSEND, C. H. TYLER. Report on the Mexican Cotton-Boll Weevil in Texas. (*Anthonomus grandis*, Boh.)

Insect life, VII, No. 4, Mar., 1895, pp. 295–309, figs. 30–31.

TOWNSEND, C. H. TYLER—Continued.

An account of the introduction of *Anthonomus grandis*, Boh., from Texas, and a record of its life history, habits, parasites, and probable enemies, together with an account of its spread, its present condition in Texas, method of importation, and the extent of damage which it has caused.

TRUE, FREDERICK W. Notes on some skeletons and skulls of porpoises of the genus *Prodelphinus*, collected by Dr. W. L. Abbott in the Indian Ocean.

Proc. U. S. Nat. Mus., XVII, No. 982, July 19, 1894, pp. 33–37.

Describes skeletons of species of *Prodelphinus* in connection with accounts of external coloration from Dr. Abbott's notes, the correlation being of much importance in determining species in this group.

—— Diagnoses of new North American mammals.

Proc. U. S. Nat. Mus., XVII, No. 999, Nov. 15, 1894, pp. 241-243.

An advance sheet of this paper was published April 26, 1894.

—— On the rodents of the genus *Sminthus* in Kashmir.

Proc. U. S. Nat. Mus., XVII, No. 1004, Nov. 15, 1894, pp 341-343.

Remarks are given on the distribution of the genus in Asia. *S. flavus* is made a new species on the basis of specimens collected by Dr. Abbott.

—— Diagnoses of some undescribed Wood Rats (genus *Neotoma*) in the National Museum.

Proc. U. S. Nat. Mus., XVII, No. 1006, Nov. 15, 1894, pp. 353–355.

An advance sheet of this paper was published November 15, 1894.

—— The proper name for Brewer's Mole.

Science, I, No. 4, Jan. 25, 1895, p. 101.

Attention is called to the scientific name appropriate for this species, which is believed to be *Parascalops Breweri*.

—— Toads on the seashore.

Science, I, No. 6, Feb. 8, 1895, p. 166.

A natural history observation at Cape May, N. J.

—— Report on the Department of Mammals in the U. S. National Museum, 1892.

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VASEY, GEORGE. Report on the Department of Botany in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 197–200.

VERRILL, ADDISON E. Descriptions of new species of Starfishes and Ophiurans, with a revision of certain species formerly described; mostly from the collections made by the U. S. Commission of Fish and Fisheries.

Proc. U. S. Nat. Mus., XVII, No. 1000, Nov. 15, 1894, pp. 245–297.

This paper is based almost entirely on specimens collected by the U. S. Fish Commission on the eastern coast of North America. Two new subfamilies, 2 new genera, and 15 new species are described.

—— Brief contributions to zoology from the Museum of Yale College, Nos. LVIII and LIX. Distribution of the Echinoderms of northeastern America.

Am. Journ. Sci. (series 3), XLIX, Nos. 290–291, Feb.-Mar., 1895, pp. 127–141, 199–212.

This paper embraces a systematic list of the Starfishes, with their bathymetrical and geographical distribution. Most of the material on which this paper is based was collected by the U. S. Fish Commission and will become the property of the Museum.

WALCOTT, CHARLES DOOLITTLE. Discovery of the genus *Oldhamia* in America.

Proc. U. S. Nat. Mus., XVII, No. 1002, Nov. 15, 1894, pp. 313–315, fig. 1.

—— Report on the Department of Paleozoic Invertebrate Fossils in the U. S. National Museum, 1892.

Rep Smithsonian Inst. (U. S. Nat Mus.), 1892 (1893), pp. 191–194.

WARD, LESTER F. Recent discoveries of cycadean trunks in the Potomac formation of Maryland.

Bull. Torrey Botan. Club, XXI, No. 7, July 20, 1894, pp. 291–294.

Gives an account of a collection of cycadean trunks made by Mr. Arthur Bibbins in Maryland, and the peculiar manner in which it was made, the specimens being all found in the possession of private individuals; also of efforts made to determine the geological horizon at which they originally occurred.

—— [Note on Professor Jenney's collection of fossil plants from the Lower Cretaceous of the Black Hills.]

Science (New series), I, New York, Feb. 1, 1895, pp. 137–138.

—— The Mesozoic flora of Portugal compared with that of the United States.

Science (New series), I, New York, Mar. 29, 1895, pp. 337–346.

A review of the literature of the Mesozoic flora of Portugal, and especially of the recent elaborate memoir of the Marquis Saporta and

WARD, LESTER F.—Continued.

M. Paul Choffat, with special indication of the analogies, both stratigraphical and paleontological, to the older Mesozoic and the Potomac formation of the United States.

—— Remarks on the genus *Caulinites*, Brongn., with exhibition of specimens (rhizomes of *Tripsacum dactyloides*).

Science (New series), I, New York, June 28, 1895, pp. 725-726.

Abstract of a paper read before the Biological Society of Washington, June 1, 1895. These rhizomes very closely resemble *C. parisiensis* (Demarest) Brongn.

—— [Fossil plants.]

Johnson's Universal Cyclopedia (New edition), VI, New York, 1895, pp. 639-645.

A somewhat complete account of the past history and present state of the science of paleobotany.

—— Report on the Department of Fossil Plants in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 185-190.

WATKINS, JOHN ELFRETH. Report on the Section of Transportation and Engineering in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 127-132, pls. I, II.

WHITE, CHARLES ABIATHAR. Notes on the invertebrate fauna of the Dakota Formation, with descriptions of new molluscan forms.

**Proc. U. S. Nat. Mus.*, XVII, No. 995, July 19, 1894, pp. 131-138, pl. VIII.

—— Memoir of Ferdinand Vandiveer Hayden, 1839-1887.

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This paper was read before the National Academy of Sciences, November, 1894.

Published also in separate form.

—— Report on the Department of Mesozoic Invertebrate Fossils in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), p. 195.

WILSON, THOMAS. Primitive industry.

Archæologist, II, No. 7, 1894, pp. 200-204; No. 8, Aug., 1894, pp. 238-246.

This paper describes early objects of primitive industry found in Europe, and compares them with those found in America. Dr. Abbott's finds of similar implements in the gravels of the river terrace at Trenton, N. J., are compared with the infructuous searches of other persons in the same terrace. It is shown that, by reason of the scarcity of the implements, the failure of an observer to find them in one locality is no evidence that another observer may not have found them in another locality. Similar experiences of the best observers in France and England are cited. Many implements of similar form and manufacture have been found in nearly every State of the Union, though practically all on the surface. This does not, however, prove the existence of Paleolithic man in America, but, as says M. Boule, is "an argument in favor of their antiquity which will greatly impress prehistoric archæologists of experience." It will serve a good purpose in stimulating further investigation, and prevent the formation of conclusions before the search has been exhausted and the evidence all in.

WILSON, THOMAS—Continued.

—— Polished stone hatchets.

Archæologist, III, No. 1, Jan., 1895, pp. 8-14; No. 2, Feb., 1895, pp. 43-50.

The polished stone hatchet is, more than any other implement, the representative of man's culture during the Neolithic or Polished Stone age. Man in this stage spread himself by migration practically over the whole world, and in so doing carried with him this implement more than any other. While the Paleolithic age of prehistoric man is called the chipped stone age, the chipping of stone-cutting implements did not cease with it, but was to some extent carried into the Neolithic or Polished Stone age. Some implements thus chipped were ground to a sharp edge or point, while others were left unground. The tools used were hammer-stones and grinding-stones. The processes are shown in six figures forming a series, from the rudely chipped to the finely polished hatchets. In the Paleolithic age the material used was such as could be chipped, while in the Neolithic age many stone implements of nonchipable material, like granite, diorite, etc., were used. These had to be reduced to the required form by hammering or pecking, called by the French *martelage*. The hatchet was inserted in a handle of wood, with the cutting edge on a line with the handle. Many specimens, mostly from France and England, have been found, which indicate this as the general method of use. The National Museum is the fortunate possessor of two original specimens thus mounted, one the property of Mr. Byron E. Dodge, of Wisconsin, and the other of Mr. C. M. Crouse, of Syracuse, N. Y. The universality of the polished stone hatchet during the Neolithic period is shown by the universality of the material used. On the seacoast and the islands fossil shells were not infrequently employed. While no two polished stone hatchets may be exactly alike, each having been the handiwork of an individual who apparently worked for himself and without pattern, they are all capable of being reduced to a few general types, and a series taken from almost any locality in the United States would represent a similar series

WILSON, THOMAS—Continued.

from almost any other locality in the same country, and would closely resemble a series from any part of the world.

—— On the presence of fluorine as a test for the fossilization of animal bones.

Am. Naturalist, XXIX, No. 340, Apr. 1895, pp. 301–317; No. 341, May, 1895, pp. 439–456.

It is greatly to be desired that some test should be discovered by which the antiquity of animal, and especially human, bones might be determined. This test is believed to have been found in fluorine. It may not be certain nor always equal, but if it furnishes, or promises to furnish, an aid in this direction, it is to be studied, examined, experimented with, and proved. Modern animal bones have but a small percentage of fluorine, less than two-tenths of 1 per cent, while it appears to increase in quantity and proportion until in those of the earlier geologic ages the proportion reaches 3 and ever 4 per cent. This increase may be different in different localities, but from analyses of a large number of specimens it seems a steadily increasing ratio, and therefore affords a means of approximate determination.

—— Grooved stone axes.

Archæologist, III, No. 5, May, 1895, pp. 155–157.

While the polished stone hatchet was almost universal among prehistoric peoples, the grooved stone ax is confined to the United States.

When the prehistoric man of Europe desired a heavier cutting implement than his polished stone hatchet, he drilled a hole through the ax and inserted a handle, sledge fashion. When

WILSON, THOMAS—Continued.

the prehistoric man of America wanted a similar implement, he made a groove around the implement and bound it with a withe, which served as a handle.

Some of these implements have the edge placed transversely to the handle and so they become adzes, and where the edge is curved instead of straight they become gouges. The same difference of detail in size, shape, form, and material remarked among polished stone hatchets have been found among grooved stone axes.

—— Stone cutting implements.

Archæologist, III, No. 6, June, 1895, pp. 179–185.

Rude notched axes resemble the grooved ax. A notch has been prepared by chipping for a withe or handle, the edges of which notch have been hammered or pecked so as to destroy their sharpness and permit the use of the withe, but they are rudely chipped, and beyond this show no traces of pecking and never of smoothing or grinding. They are peculiar in their shape and can not have been grooved stone axes in process of manufacture, though they may have been its evolutionary ancestor. They are always made of material which can be chipped—like flint, quartzite, rhyolite, etc.—and seem never to have been made of non-chipable material, as granite, diorite, etc. They are found in many localities throughout the United States.

—— Report on the Department of Prehistoric Anthropology in the U. S. National Museum, 1892.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1892 (1893), pp. 135–142.

LIST OF NAMES OF INDIVIDUALS, WITH ADDRESSES, INCLUDED IN THE FOREGOING BIBLIOGRAPHY.

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SUPPLEMENT A.

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[1] Genus of Cyrenellidæ, based on the Philippine *Cyrenella oblonga*, Sowerby. The name, however, turns out to be preoccupied by Monterosato (1888), and may be modified to *Joannisiella*.

SUPPLEMENT B.

LIST OF NEW SPECIES AND SUBSPECIES DESCRIBED IN THE PAPERS REFERRED TO IN THE FOREGOING BIBLIOGRAPHY.

[An asterisk indicates that the type specimen is not in the National Museum.]

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Abutilon bastardioides. Baker. (Bot.) Colima, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 306.

Acalypha coryloides. Rose. (Bot.) Manzanillo, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 357.

Acalypha papillosa. Rose. (Bot.) Agibampo, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 358.

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Acoloides fuscipennis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 215.

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Aglaotoma longicornis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 65.

Aglaotoma pallida. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 64.

Aglaotoma variabilis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 65.

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Rhogas pectoralis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 123.

Rhoptromeris insularis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 74.

Rhus frigida. Knowlton. (Foss. pl.) Alaska. *Proc. U. S. Nat. Mus.*, XVII, No. 998, Aug. 2, 1894, p. 227, pl. IX, fig. 6.

Rhyssalus brunneiventris. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 128.

Rhyssalus cænophanoides. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 127.

Rhyssalus melleus. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 127.

Rileya mellea. Ashmead. (Hym.) Indian River, Florida. *Trans. Amer. Ent Soc*, XXI, Sept., 1894, p. 321.

Rondeletia bicolor. Goode and Bean. (Pisc.) Northwestern Atlantic. *Proc. U. S. Nat. Mus.*, XVII, No. 1012, Jan. 26, 1895, p. 454, pl. XVII, fig. 1.

Roptrocerus auratus. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 158.

Sactogaster affinis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 238.

Sactogaster rufipes. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos 159–160, p. 238.

Sagda maxima. Simpson. (Moll.) Jamaica. *Proc. U. S. Nat. Mus.*, XVII, No. 1011, Jan. 26, 1895, p. 448, pl. XVI, figs 7–8.

Salix minuta. Knowlton. (Foss. pl.) Alaska. *Proc. U. S. Nat. Mus.*, XVII, No. 998, Aug. 2, 1894, p. 218, pl. IX, fig. 1.

Sassafridium macrophyllum. Rose. (Bot.) Manzanillo, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 355.

Sayella crosseana bahamensis. Dall. (Moll.) Bahamas. *Bull. Mus. Comp. Zool.*, XXV, No. 9, II, Oct., 1894, p. 117.

Schrankia diffusa. Rose. (Bot.) Manzanillo, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 327.

Scolecithrix cristata. Giesbrecht. (Copep.) Off California. *Bull. Mus. Comp. Zool.*, XXV, No. 12, Apr., 1895, p. 252, pl. II, figs. 6-8; pl. III, figs. 1–5.

Scolecithrix persecans. Giesbrecht. (Copep.) Off California. *Bull. Mus. Comp. Zool.*, XXV, No. 12. Apr., 1895, p. 253, pl. III, figs. 6–12.

Scolioneura canadensis.* Marlatt. (Hym.) Canada. *Proc. Ent. Soc. Wash.*, III, June, 1895, No. 4, p. 235.

Scolioneura populi Marlatt. (Hym.) Las Cruces, N. Mex. *Proc. Ent. Soc. Wash.*, III, June, 1895, No. 4, p. 235.

Sebastichthys brevispinis. Tarleton H. Bean. (Pisc.) Alaska. *Proc. U. S. Nat. Mus.*, XVII, No. 1027, May 11, 1895, pp. 627–628.

Serjania albida. Radlkofer. (Bot.) Santa Agueda, Lower California. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 367.

Serjania brachylopha. Radlkofer. (Bot.) Jalisco, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 368.

Serjania fuscopunctata. Radlkofer. (Bot.) Manzanillo, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 316.

Serjania rutæfolia. Radlkofer. (Bot.) Agiabampo, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan., 1895, p. 316.

Serjania trifoliolata. Radlkofer. (Bot.) Manzanillo, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan., 1895, p. 317.

Sminthus flavus. True. (Mamm.) Central Kashmir. *Proc. U. S. Nat. Mus.*, XVII, No. 1004, Nov. 15, 1894, p. 341.

Solaster Benedicti. Verrill. (Aster.) Off Georges Bank and Marthas Vineyard. *Proc. U. S. Nat. Mus.*, XVII, No. 1000, Nov. 15, 1894, p. 273.

Solaster syrtensis. Verrill. (Aster.) Northeast coast North America. *Proc. U. S. Nat. Mus.*, XVII, No. 1000, Nov. 15, 1894, p. 271.

Spigelia Palmeri. Rose. (Bot.) Manzanillo, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 342.

Spilochalcis misturatus. Howard. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 80.

Spilochalcis nigritus. Howard. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 79.

Spilomicrus aneurus. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 246.

Spilomicrus vulgaris. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 247.

Spintherus dubius. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 159.

Stenophasmus terminalis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 114.

Suberites concinnus. Lambe. (Porif.) Arctic Ocean, Bering Sea, and North Pacific Ocean. *Trans. Roy. Soc. Canada*, XII, 1894, section 4, p. 128, pl. II, figs. 12, 12a, June, 1895.

Synopeas dubius. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 239.

Syntomaspis punctifrons. Ashmead. (Hym.) St Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 154.

Syntomosphyrum insularis. Ashmead. (Hym.) St.Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 181.

Systole abnormis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 146.

Tedania fragilis. Lambe. (Porif.) Alaska and British Columbia. *Trans. Roy. Soc. Canada*, XII, 1894, section 4, p. 116, pl. II, figs. 3, 3a–c, June, 1895.

Telenomus confusus. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 204.

Telenomus cubiceps. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 206.

Telenomus difformis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 205.

Telenomus flavicornis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 210.

Telenomous flavopetiolatus. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 207.

Telenomus fuscipennis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 210.

Telenomus impressus. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 204.

Telenomus magniclavus. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 205.

Telenomus medius. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 207.

Telenomus megacephalus. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 212.

Telenomus meridionalis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 208.

Telenomus monilicornis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 203.

Telenomus nigrocoxalis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 211.

Telenomus pectoralis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 206.

Telenomus pygmæus. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 208.

Telenomus Sancti-Vincenti. Ashmead. (Hym.) St. Vincent. *Journ Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 211.

Telenomus scaber. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 208.

Telenomus Smithii. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 209.

Tephrosia multifolia. Rose. (Bot.) Manzanillo, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 320.

Tetanolita floridana. Smith. (Lep.) Florida, Texas. *Bull. U. S. Nat. Mus.*, No. 48, 1895, p. 63.

Tetramerium aureum. Rose. (Bot.) Colima, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 349.

Tetramerium diffusum. Rose. (Bot.) Manzanillo, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 349.

Tetramerium tenuissimum. Rose. (Bot.) Colima, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 349.

Tetrarhapta rufipes. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 69.

Tetrastichodes cupreus. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 182.

Tetrastichodes femoratus. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 183.

Tetrastichus acutipennis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 186.

Tetrastichus basilaris. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 186.

Tetrastichus cupreus. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 184.

Tetrastichus fasciatus. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 187.

Tetrastichus longicornis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 185.

Tetrastichus punctifrons. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 187.

Tetrasticus vulgaris. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 185.

Thichopria atriceps. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 253.

Thrips trifasciatus. Ashmead. (Thysanoptera.) Utica, Miss. *Insect Life*, VII, No. 1, Sept., 1894, p. 27.

Thryothorus leucophrys. Anthony. (Aves.) San Clemente Island, California. *Auk*, XII, No. 1, Jan., 1895, p. 52.

Thysanopoda Agassizi. Ortmann. (Schiz.) Gulf of Panama and vicinity. *Bull. Mus. Comp. Zool.*, XXV, No. 8, Sept., 1894, p. 99.

Tornatina parviplica. Dall. (Moll.) Bahamas. *Bull. Mus. Comp. Zool.*, XXV, No. 9, II, Oct., 1894, p. 115, fig. 8.

Torymus pallidipes. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 153.

Torymus rugosipunctatus. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 153.

Toxochalina borealis. Lambe. (Porif.) Kyska Harbor, Alaska. *Trans. Roy. Soc. Canada*, XII, 1894, section 4, p. 115, pl. II, figs. 2, 2a–e, June, 1895.

Toxoneura atricornis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 132.

Trichilia havanensis spatulata. Rose. (Bot.) Colima, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 314.

Trichopria insularis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 252.

Trichopria pleuralis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 252.

Tridax dubia. Rose. (Bot.) Colima, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 337.

Tridymus solitarius. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 154.

Trissolcus laticeps. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 212.

Tropidopria nigriceps. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 250.

Tropidopria pallida. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 250.

Tropidopria triangularis. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 249.

Tropidopsis clavata. Ashmead. (Hym.) St. Vincent. *Journ. Linn. Soc.* (Zool.), XXV, 1894, Nos. 159–160, p. 245.

Uta Mearnsi. Stejneger. (Rept.) Coast Range of California. *Proc. U. S. Nat. Mus.*, XVII, No. 1020, Nov. 30, 1894, p. 589.

Venus (Anomalocarda) leptalea. Dall. (Moll.) Bahamas. *Bull. Mus. Comp. Zool.*, XXV, No. 9, II, Oct., 1894, p. 114, fig. 5.

Viguiera tenuis alba. Rose. (Bot.) Colima, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 336.

Xylosma horrida. Rose. (Bot.) Manzanillo, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 303.

Xylosma Palmeri. Rose. (Bot.) Manzanillo, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 303.

Zachresta dimidiata. Ashmead. (Hym.) Utica, Miss. *Insect Life*, VII, No. 3, Dec., 1894, p. 243.

Zanclognatha minoralis. Smith. (Lep.) New York. *Bull. U. S. Nat. Mus.*, No. 48, 1895, p. 34.

Zanclognatha punctiformis. Smith. (Lep.) District of Columbia. *Bull. U. S. Nat. Mus.*, No. 48, 1895, p. 37.

Ziziphus Townsendi. Knowlton. (Foss. pl.) *Proc. U. S. Nat. Mus.*, XVII, No. 998, Aug. 2, 1894, p. 229, pl. IX, figs. 8, 9.

Zizyphus mexicana. Rose. (Bot.) Armenia, Mexico. *Contrib. U. S. Nat. Herbarium*, I, No. 9, Jan. 31, 1895, p. 315.

Zosterops aldabrensis. Ridgway, (Aves.) Aldabra Island. *Proc. U. S. Nat. Mus.*, XVII, No. 1008, Nov. 15, 1894. p. 371.

Zosterops madagascariensis gloriosæ. Ridgway. (Aves.) Gloriosa Island. *Proc. U. S. Nat. Mus.*, XVII, No. 1008, Nov. 15, 1894, p. 372.

APPENDIX V.

List of Papers in the Proceedings of the National Museum, Published in Separate Form during the Year ending June 30, 1895.

FROM PROCEEDINGS, VOLUME XVII.

No. 981. An analysis of Jadeite from Mogoung, Burma. By Oliver C. Farrington. pp. 29–31.

No. 982. Notes on some skeletons and skulls of Porpoises of the genus *Prodelphinus*, collected by Dr. W. L. Abbott in the Indian Ocean. By Frederick W. True. pp. 33-37.

No. 983. Description of nests and eggs of some new birds, collected on the island of Aldabra, northwest of Madagascar. By Dr. W. L. Abbott. pp. 39–41.

No. 984. Notes on the crabs of the family Inachidæ in the U. S. National Museum. By Mary J. Rathbun. pp. 43–75.

No. 985. On the formation of stalactites and gypsum incrustations in caves. By George P. Merrill. pp. 77–81, pls. II–V.

No. 986. Descriptions of a new genus and four new species of crabs from the Antillean region. By Mary J. Rathbun. pp. 83–86. (An advance edition of this paper was published during the preceding fiscal year.)

No. 987. The formation of sandstone concretions. By George P. Merrill. pp. 87–88, pl. VI.

No. 988. Monograph of the genus *Gnathodon*, Gray (*Rangia*, Desmoulins). By Wm. H. Dall. pp. 89–106, pl. VII.

No. 989. On the nomenclature and characteristics of the Lampreys. By Theodore Gill. pp. 107–110.

No. 990. The nomenclature of the Myliobatidæ or Ætobatidæ. By Theodore Gill. pp. 111–114.

No. 991. The nomenclature of the family Pœciliidæ or Cyprinodontidæ. By Theodore Gill. pp. 115–116.

No. 992. The differential characters of the Salmonidæ and Thymallidæ. By Theodore Gill. pp. 117–122.

No. 993. On the relations and nomenclature of Stizostedion or Lucioperca. By Theodore Gill. pp. 123–128.

No. 994. Description of a new species of Cotton Rat (*Sigmodon minima*) from New Mexico. By Edgar A. Mearns. pp. 129–130.

No. 995. Notes on the invertebrate fauna of the Dakota formation, with descriptions of new molluscan forms. By Charles A. White. pp. 131–138, pl. VIII.

No. 996. The shells of the Tres Marias and other localities along the shores of Lower California and the Gulf of California. By Robert E. C. Stearns. pp. 139–204.

No. 997. Notes on a Japanese species of Reed Warbler. By Leonhard Stejneger. pp. 205–206.

No. 998. A review of the fossil flora of Alaska, with descriptions of new species. By F. H. Knowlton. pp. 207–240, pl. IX.

No. 999. Diagnoses of new North American mammals. By Frederick W. True. pp. 241-243. (An advance edition of this paper was published during the preceding fiscal year.)

No. 1000. Descriptions of new species of starfishes and ophiurans, with a revision of certain species formerly described. By A. E. Verrill. pp. 245–297.

No. 1001. Notes on the anatomy and affinities of the Cœrebidæ and other American birds. By Frederic A. Lucas. pp. 299–312.

No. 1002. Discovery of the genus *Oldhamia* in America. By Charles D. Walcott. pp. 313–315.

No. 1003. Notes on reptiles and batrachians collected in Florida in 1892 and 1893. By Einar Lœnnberg. pp. 317–339.

No. 1004. On the rodents of the genus *Sminthus* in Kashmir. By Frederick W. True. pp. 341–343.

No. 1005. The relationship of the lacertilian genus *Anniella*, Gray. By G. Baur. pp. 345–351.

No. 1006. Diagnoses of some undescribed Wood Rats (genus *Neotoma*) in the National Museum. By Frederick W. True. pp. 353–355. (An advance edition of this paper was published during the preceding fiscal year.)

No. 1007. Descriptions of twenty-two new species of birds from the Galapagos Islands. By Robert Ridgway. pp. 357-370.

No. 1008. Descriptions of some new birds from Aldabra, Assumption, and Gloriosa islands, collected by Dr. W. L. Abbott. By Robert Ridgway. pp. 371–373.

No. 1009. A revision of the fishes of the subfamily Sebastinæ of the Pacific coast of America. By Carl H. Eigenmann and Charles H. Beeson. pp. 375–407.

No. 1010. Additional notes on the native trees of the Lower Wabash Valley. By Robert Ridgway. pp. 409–421, pls. X–XV.

No. 1011. Distribution of the land and fresh-water mollusks of the West Indian region, and their evidence with regard to past changes of land and sea. By Charles Torrey Simpson. pp. 423–450, pl. XVII.

No. 1012. Scientific results of explorations by the U. S. Fish Commission steamer *Albatross*. No. XXVIII.—On Cetomimidæ and Rondeletiidæ, two new families of bathybial fishes from the Northwestern Atlantic. By G. Brown Goode and Tarleton H. Bean. pp. 451–454, pl. XVII.

No. 1013. Scientific results of explorations by the U. S. Fish Commission steamer *Albatross*. No. XXIX.—A revision of the order Heteromi, deep-sea fishes, with a description of the new generic types *Macdonaldia* and *Lipogenys* By G. Brown Goode and Tarleton H. Bean. pp. 455–470, pl. XVIII.

No. 1014. Scientific results of explorations by the U. S. Fish Commission steamer *Albatross*. No. XXX.—On *Harriotta*, a new type of Chimæroid fish from the deeper waters of the Northwestern Atlantic. By G. Brown Goode and Tarleton H. Bean. pp. 471–473, pl. XIX.

No. 1015. Overlaying with copper by the American aborigines. By Otis T. Mason. pp. 475–477.

No. 1016. Scientific results of explorations by the U. S. Fish Commission steamer *Albatross*. No. XXXI.—Descriptions of new genera and species of crabs of the family Lithodidæ, with notes on the young of *Lithodes camtschaticus* and *Lithodes brevipes*. By James E. Benedict. pp. 479–488.

No. 1017. Scientific results of explorations by the U. S. Fish Commission steamer *Albatross*. No. XXXII.—Report upon the crustacea of the order Stomatopoda collected by the steamer *Albatross* between 1885 and 1891, and on other specimens in the U. S. National Museum. By Robert Payne Bigelow. pp. 489-550, pls. XX–XXII.

No. 1018. The pterylography of certain American Goat-suckers and Owls. By Hubert Lyman Clark. pp. 551–572.

No. 1019. The Box Tortoises of North America. By W. E. Taylor. pp. 573–588.

No. 1020. Description of *Uta Mearnsi*, a new lizard from California. By Leonhard Stejneger. pp. 586-591. (An advance edition of this paper was also published during the present year.)

No. 1021. Notes on Butler's garter snake. By Leonhard Stejneger. pp. 593–594.

No. 1022. On the specific name of the Coachwhip Snake. By Leonhard Stejneger. pp. 595–596.

No. 1023. Description of a new Salamander from Arkansas, with notes on *Ambystoma annulatum*. By Leonhard Stejneger. pp. 597–599.

No. 1024. Diagnosis of a new genus of Trogons (*Heterotrogon*), based on *Hapaloderma vittatum* of Shelley; with a description of the female of that species. By Charles W. Richmond. pp. 601–603.

No. 1025. On the Bothriothoracine insects of the United States. By L. O. Howard. pp. 605–613.

No. 1026. Notes on the geographical distribution of scale insects. By T. D. A. Cockerell. pp. 615–625.

No. 1027. Description of a new species of Rockfish, *Sebastichthys brevispinis*, from Alaska. By Tarleton H. Bean. pp. 627-628.

No. 1028. Description of a new species of fish, *Bleekeria Gilli*. By Tarleton H. Bean. pp. 629–630.

No. 1029. Description of *Gobioides broussoneti*, a fish new to North America, from the Gulf of Mexico. By Tarleton H. Bean and Barton A. Bean. pp. 631-632.

No. 1030. Scientific results of explorations by the U. S. Fish Commission steamer *Albatross*. No. XXXIII.—Descriptions of two new flounders, *Gastropsetta frontalis* and *Cyclopsetta Chittendeni*. By Barton A. Bean. pp. 633–636.

No. 1031. Notes on some eruptive rocks from Gallatin, Jefferson, and Madison counties, Montana. By George P. Merrill. pp. 637–673.

FROM PROCEEDINGS, VOLUME XVIII.

No. 1040. Description of a new species of Golden Beetle from Costa Rica. By Martin L. Linell. pp. 77–78. (Advance sheet.)

No. 1041. Two new species of beetles of the tenebrionid genus *Echocerus*. By F. H. Chittenden. pp. 79–80. (Advance sheet.)

APPENDIX VI.

Specimens Sent to the Museum for Examination and Report.[1]

The following is a complete list of the specimens received for examination and report, arranged alphabetically by the names of the senders, during the year ending June 30, 1895:

Agriculture, Department of, through Mr. Charles W. Dabney, jr., Assistant Secretary: Fish scales. 2811 (v).

Alexander, D. W., Indianapolis, Ind.: Insect. (Returned.) 2884 (vii).

Alfred, H. C., Huron, Ind. T.: Small stone. 2945 (xiii)

Allen, Levi, Salubria, Idaho: Ore. 3002 (xiii).

American Museum of Natural History, New York City: Skins and skulls of Kangaroo rats. (Returned.) 3092 (i).

Amicaux, Mrs. G., Jersey City Heights, N. J.: Facsimile of a West Indian prehistoric object. (Returned.) 2999 (xiv).

Anderson, Knud, Copenhagen, Denmark, through Dr. Leonhard Stejneger: Specimen of Chloris. 2919 (ii).

Anthony, A. W., San Diego, Cal.: Thirteen birds' skins from Colorado, California, and other localities; 4 birds' skins from Lower California; 3 birds' skins from Mexico. (Returned.) 2876, 2923, 3070, 3087 (ii).

Archbald, J. R., & Co., Vallecitos, N. Mex.: Rock. (Returned.) 2870 (xiii).

Armistead, Miss Bessie, San Antonio, Tex.: Spider. (Returned.) 2924 (vii).

Armstrong, F. B., Alta Mira, Mex.: Birds' skins (15 returned and 18 purchased); 14 birds' skins (2 returned and 12 retained); 36 birds' skins (13 returned and the remainder retained). 3049 (29026); 3066 (29103); 3072 (29125) (ii).

Ash, John, Churchland, Va.: Mineral. (Returned.) 3135 (xii).

Ashurst, W. T., Blackburn, Mo.: Fossils. (Returned.) 2874 (x-b).

Avent, T. L., Fulton, Wyo.: Stone from the stomach of a deer. (Returned.) 3071 (xiii).

Babcock, A. J., Mayoworth, Wyo.: Two fossil bones and 2 photographs. (Returned.) 3194 (x-b).

Bach, E., Aberdeen, S. Dak.: Insects. 2941 (28855) (vii).

Bailey, J. B., Washington, D. C.: Insects. 3213 (vii).

Baker, Miss H. M., Manhattan, Ill.: Plants. 2784, 2824 (xi).

Barbour, E. H., University of Nebraska, Lincoln, Nebr.: Clay-like substance. 3136 (29318) (xiii).

Barclay, A. O., Reagan, Tex.: Ore from New Mexico. 3126 (xiii).

Barton, H. H., Idaho Falls, Idaho: Plants. (Returned.) 3156 (xi).

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[1] The first number accompanying the entries in the above list is that assigned to sendings "for examination" on the Museum records. The number in Roman, in parentheses, indicates the department in the Museum to which the material is referred for examination and report. The numbers assigned to the departments in the Museum have been changed since the last report was published. When material is permanently retained, a number of another series, i. e., the permanent accession record, is placed in parentheses between the two sets of numbers referred to.

BAUR, Dr. GEORGE, Walker Museum, University of Chicago, Chicago, Ill.: Eight birds' skins from Galapagos Islands; birds' skins from the same locality. 2806, 3173, 3183 (Returned). (II).

BEAVER, S. H., Seward, Nebr.: Piece of supposed meteorite. 2787 (XII).

BECKWITH, CLINTON, Herkimer, N. Y.: Earth. (Returned.) 3000 (XIII).

BEDTELYM, G., Larene, Wash.: Ore. (Returned.) 3010 (XIII).

BEEMAN, I. E., Waukon, Iowa: Part of a branch of a maple tree partly covered with scales. 3161 (VII).

BELTZER, J. A, Ogden, Utah: Mineral. (Returned.) 3104 (XII).

BENDIRE, Maj. CHARLES, U. S. A. (See under B. J. Bretherton and Chase Littlejohn).

BENTLEY, C. W., jr., Bentley Springs, Md.: Ore. (Returned.) 2862 (XIII).

BIEDERMAN, C. R., Bonito, N. Mex.: Magnetic iron. 2851 (XIII).

BINKLEY, S. H., Alexandersville, Ohio: Natural formation. 3224 (XIV).

BIOLOGICAL SOCIETY OF ONTARIO, Toronto, Ontario, Canada, through Herbert H. Brown: Sixty birds' skins. (Returned.) 3079 (II).

BISHOP, Dr. L. B., New Haven, Conn.: Bird skin. (Returned.) 2984 (II).

BLACKMOND, F. B., Dowagiac, Mich.: Mineral. 2772 (XII).

BLAKE, F. A., Rociada, N. Mex.: Ore. 3228 (XIII).

BLATCHLEY, Prof. W. S., Terre Haute, Ind.: Snake. (Returned.) 2927 (IV).

BLUE ROCK CONTRACTING COMPANY, San Francisco, Cal, through T. E. Champion, general superintendent: Rock. (Returned.) 2837 (XIII).

BODENHEIMER, A. L., South Knoxville, Tenn.: Insect. (Returned.) 3199 (VII)

BOMBERGER, Rev. J. H., Columbiana, Ohio: Beetles; insects. 2831 (28471); 3021 (returned). (VII).

BOND, W. R., Custer, S. Dak.: Supposed lithographic stone. (Returned.) 3033 (XIII).

BOOTH, L. M., Stepney, Conn.: Insect. (Returned.) 2795 (VII).

BOSHART, C. F., Lownville, N. Y.: Four birds' skins. (Returned.) 3034 (II).

BOWER, L. F., Carlisle, Pa.: Fish bone. (Returned.) 3133 (V)

BOWMAN, D. A., Bakersville, N. C.: Gangue specimen of emerald. (Returned.) 3025 (XII).

BOWRON, W. M., South Pittsburg, Tenn.: Fossil. (Returned.) 2875 (X–b).

BOYD, S. D., Leesburg, Va.: Minerals. (Returned.) 2891 (XII).

BRACKEN, A. H., Hensley, N. C.: Ore. 2855 (XIII).

BRADLEY, I. S., Dayton, Ohio: Insect egg. (Returned.) 3016 (VII).

BRAXTON, L. F., Mount Morris, Ill.: Insects. 2809 (VII).

BRENINGER, G. F., Santa Cruz, Cal.: Thirty birds' skins. 3100 (29297) (II).

BRETHERTON, B. J., Newport, Oreg., through Maj. Charles Bendire, U. S. Army: Birds' skins from Oregon and Alaska. 2902, 2968, 2987 (returned); 3091 (29296); 3167 (29436) (II).

BREWSTER, M. W., Boundary, Wash.: Rocks. (Returned.) 2827 (XIII).

BREWSTER, WILLIAM, Cambridge, Mass.: Eight specimens of Gyrfalcona from Greenland, Maine, and Alaska; 31 birds' skins from Lower California. (Returned.) 3042, 3124 (II).

BRIMLEY, H. H. & C. S., Raleigh, N. C.: Reptiles and batrachians from North Carolina, Texas, and Canada. (Returned.) 2962, 3020, 3148 (IV).

BRISBIN, EDWARD, Boise City, Idaho: Rock. 2952 (XIII).

BROWN, G. W., Riverton, Ala.: Four-leaved weed, supposed to be an antidote for the bite of a rattlesnake. 2817 (XVII).

BROWN, HERBERT, Tucson, Ariz.: Snakes and lizards. (Returned.) 2980 (IV).

BROWN, H. H. (See under Biological Society of Ontario.)

BROWN, N. H., Lander, Wyo.: Crystals. (Returned.) 2982 (XII).

BROWN, Prof. S. B., Morgantown, W. Va.: Fossil plants. 2966 (28758) (X–c).

BRUNER, Prof. H. L., Irvington, Ind.: Two snakes. (Returned.) 3052 (IV).

BUCK, Rev. D. S., Lepanto, Ark.: Fragments of bone and pottery. 3029 (29382) (XIV).

BULL, EDWARD, Newbern, N. C.: White substance taken from honey. (Returned.) 3116 (VII).

BURCH, J. F., Mankato, Minn.: Coin. (Returned.) 3078 (XVII).

BURNS, J. J., Sprague, Wash.: Rock. (Returned.) 3102 (XIII).

BUSHNELL, C. S., Jacksonville, Fla.: Rock. (Returned.) 3187 (XIII).

BUSTER, J. C., San Pedro, Cal.: Minerals. (Returned.) 3184 (XII).

BUTCHER, M., Ogden, Utah: White substance resembling sand. (Returned.) 2778 (XIII).

BYNUM, Dr. J. C., Stewartsville, Mo.: Supposed petrified eye. (Returned.) 3009 (X–a).

CALIFORNIA ACADEMY OF SCIENCES, San Francisco, through L. M. Loomis: Eleven birds' skins; 8 birds' skins from Lower California. (Returned.) 3099, 3125 (II).

CALLIHAN, A. E., Benkelman, Nebr.: Small iron spoons. (Returned.) 3207 (XV).

CAMP, Col. W. B., Sacketts Harbor, N. Y.: Two carved stone pipes. (Returned.) 2960 (XIV).

CAMPBELL, W. P., Bethany, W. Va.: Maori robe, made from the root of New Zealand flax. 3234 (29561) (XIV).

CAPWELL, V. L., Luzerne, Pa.: Ores. 3176 (XIII).

CARPENTER, D. H., Sidney, Colo.: Two specimens of onyx. 2830 (XIII).

CARR, J. C., Morris, Ill.: Fossil plants. 3058 (X–c).

CARSON, C. J. R., Los Angeles, Cal.: Mexican Indian armor, Spanish shield, and California Mission keys. (Keys returned, armor and shield retained.) 3081 (29421) (XV).

CASE, S. T., Escondido, Cal.: Mineral. (Returned.) 3074 (XII).

CHAMBERS, JAMES, Prescott, Ariz.: Ore. (Returned.) 3015 (XIII).

CHAMPION, T. E. (See under Blue Rock Contracting Company.)

CHAMBERS, M. J. C., Frankfort, Mich.: Fragments of pottery. (Returned.) 3093 (XIV).

CHANDLER, G. A., Osage, Iowa: Fur coat. (Returned.) 3197 (I).

CHARLTON, L., Edgefield Court-house, S. C.: Earth. (Returned.) 3038 (XIII).

CHASE, V. H., Wady Petra, Ill.: Three specimens of *Caulopteris*. (Returned.) 3131 (X–b).

CHILD, ERASTUS, Bedford, Iowa: Insect. (Returned.) 2947 (VII).

CLARK, C. B., Covington, Ky.: Supposed aerolite. (Returned.) 3018 (XII).

CLEMONS, W. T., Syracuse, N. Y.: Insect. (Returned.) 2790 (VII).

CLICKERSON, CHARLES, Tangier, Ind.: Arrow-head. (Returned.) 2769 (XIV).

COLLINS, THOMAS, New York City: Insect. (Returned.) 2794 (VII).

COLLINS, T. J., Haddonfield, N. J.: Unfinished ceremonial object, boat-shaped object, and fragment of a worked skull. (Returned.) 2894 (XIV).

CONNER, DAVID, San Pedro, Cal.: Ore. (Returned.) 2938 (XIII).

COOK, F. L., Milford, Ohio: Continental fractional currency. (Returned.) 3039 (XVII).

COSTA RICA, MUSEUM OF, through Señor J. Fid. Tristán: Crustaceans. (8 specimens returned, 3 retained). 2971 (30099) (VIII).

COX, PHILIP, Upper Maugerville, New Brunswick: Fishes; 3 frogs. (Returned.) 2818, 2926 (V, IV).

CRAIGEN, C. S., Fox Lake, Wis.: Supposed meteorite. (Returned.) 3179 (XII).

CRESNUTT, M. N., Big Spring, Ind.: Insect. (Returned.) 3177 (VII).

CRITES, S. M., Peoria, Ill.: Sample of wood. (Returned.) 2853 (XVII).

CROCKETT, Dr. J. G., Pulaski, Va.: Chrysalis of an insect. (Returned.) 3191 (VII).

CUNDIFF, W. H., Decatur, Tex.: Rocks. (Returned.) 3185 (XIII).

CURRY, J. B., jr., Key West, Fla.; through Senator Pasco: Substance taken from a whale. 2957 (I).

DABNEY, CHARLES W., jr. (See under Department of Agriculture.)

DAVEY, M. A., Galveston, Tex.: Crabs. 3170 (29419) (VIII).

DAVIDSON, F. J., Pinos Altos, N. Mex.: Mineral. (Returned.) 2981 (XII).

DAVIES, J. L., Davenport, Wash.: Rock. (Returned.) 2975 (XIII).

DAY, C. W., Cliftondale, Mass.: Coleoptera. (Returned.) 3134, 3169 (VII).

DE LONG, W. E., Morrillton, Ark.: Plant. 3041 (XI).

DENNETT, W. S., Saco, Me.: Acorn from a red-oak tree, with a worm and case embedded. 2918 (VII).

DEVEREUX, A., Decatur, Tex.: Rocks. 3206 (XIII).

DIEHL, V. B., Scotland, S. Dak.: Rock. (Returned.) 3032 (XIII).

DOLAN, A., Greenwood Springs, Colo.: Minerals. (Returned.) 3233 (XII).

DONALDSON, F. H., East Helena, Mont.: Insect. (Returned.) 2885 (VII).

DOWNIE, W. G., Pomeroy, Ohio: Supposed mica. (Returned.) 2950 (XII).

DRAKE, Mrs. MARIA, Tacoma, Wash.: Marine shells. (Returned.) 3222 (VI).

DRYSDALE, S. H., Proctor, Mo.: Mineral. (Returned.) 3108 (XII).

DUGÈS, Dr. A., Guanajuato, Mexico: Distomas. 3119 (VIII–a).

DUPREE, WILLIAM, Brooklyn, N. Y.: Ore from Missouri. (Returned.) 3028 (XIII).

DWIGHT, JONATHAN, jr., New York City: Bird. 2930 (II).

EALSCH, CHARLES, Georgetown, N. Mex.: Ore. (Returned.) 3165 (XIII).

EBBS-CANOVAN, H. W., Department of Interior, Topographical Surveys Branch, Ottawa, Canada: Plants. (Returned.) 3073 (XI).

ELLIS, Dr. J. G., Denison, Tex.: Plant. 2856 (XI).

ELROD, Prof. M. J., Wesleyan University, Bloomington, Ill.: Plants; 40 birds' skins from Idaho. 3043 (portion returned, remainder retained, 29038); 3064 (portion returned, 1 specimen retained, 29076). (XI, II.)

ENGLE, G. F., Angelica, N. Y.: Supposed meteorite. (Returned.) 2900 (XII).

ESTES, F. D., Leavenworth, Wash.: Ore. (Returned.) 3086 (XIII).

EVANS, C. R., Myrtlewood, Ala.: Insect. (Returned.) 2886 (VII).

EVANS, Dr. D. W., Dell Rapids, S. Dak.: Cement concretions. (Returned.) 3044 (XIII).

EVENSON, W. E.: Mushroom. 2909 (XI).

FENTON, HUGH, Peola, Wash.: Sand supposed to contain mineral substance. (Returned). 2976 (XIII).

FIELD, W. R., Greenville, Pa.: Botanical specimen. 2943 (XI).

FIELDS, C. C., Wallace, Va.: Rock and clay. (Returned.) 3146 (XIII).

FISHER, A. W., Moscow, Mich.: Flint. 2835 (XIV).

FISHER, G. S., Belle Vernon, Pa.: Arrowheads, old coins, and fragments of pottery. (Returned.) 2869 (XIV).

FISHER, W. H., Baltimore, Md.: Fish. 2904 (28601) (V).

FITZGERALD, E., Indian Orchard, Mass.: Two stone implements. (Returned.) 3129 (XIV).

FITZGERALD, M. G., Dayton, Ohio: Stone. (Returned.) 2815 (XIII).

FLINT, H. H., Willimantic, Conn.: Samples of Japanese lacquer. 2843 (XVII).

FORREST, L. B., Quicks Bend, Pa.: Mineral. (Returned.) 2958 (XII).

FORSTER, J. B., Chipley, Fla. Rock. 3101 (XIII).

FOSTER, Miss ALIDA, Custer City, Pa.: Insect. (Returned.) 3202 (VII).

FRAILEY, Miss, Brookeville, Md.: Chryaalis of an insect. (Returned.) 2852 (VII).

FRASER, J. D., Edgefield, S. C.: Earth. (Returned.) 3038 (XIII).

FRAZER, Mrs. A. E., Dakota City, Nebr.: Drilled ceremonial object from Ohio. 3112 (XIV).

FRAZER, J. E., Kokomo, Ind.: Metal. (Returned.) 3130 (XIII).

FRENCH, J. C., Olean, N. Y.: Ore. (Returned.) 2797 (XIII).

FRILL, JOSEPH, Victoria, Ky.: Powder which fell during a snowstorm. 3035 (XIII).

FULLER, J.C., Salem, Mass.: North American land shells. (Returned.) 2905 (VI).

FURMAN, C. M., jr., Clemson College, S. C.: Indian implement. 2880 (29909) (XIV).

GADSBY, JOHN, Eau Claire, Pa.: Insect (Returned.) 2793 (VII).

GALLAGHER, J. D., Newark, N. J. Insects. 3230 (VII).

GALLAHER, E. D., Rosslyn, Wash.: Mineral. 2929 (XII).

GANNAWAY, C. B., Fort Smith, Ark. Ceremonial tablet. 2863 (XIV).

GARNER, R. L., Washington, D. C.: Mineral from Virginia. (Returned.) 2774 (XII).

GARVEY, D. D., Duluth, Minn.: Clay. (Returned.) 2860 (XIII).

GILLIAN, Rev. J. D., Salt Lake City, Utah: Fragment of a mammal bone. (Returned.) 2936 (IX).

GODKIN, O. W., Tacoma, Wash.: Two specimens of lignite and ore. (Returned.) 3037 (XIII).

GOUDGE, Mrs. I. H. (See under Provincial Museum, Halifax, Nova Scotia.)

GOULD, C. N., Maple City, Kans.: Fossils. 3159 (part returned, remainder retained, 29402); 3117 (portion returned, remainder retained, 29232); 3208 (portion returned, remainder retained, 29481). (X–b).

GRAHAM, H. J., Boerne, Tex.: Ore. 3192 (XIII).

GRAVENHORST, Hon. W. M. B., vice-consul of The Netherlands, New York City: Shell. 3164 (VI).

GRAY, S. C., Deavertown, Ohio: Stone implements. (Returned.) 3088 (XIV).

GRESLEY, W. S., Erie, Pa., through Prof. H. S. Williams: Iron containing supposed organic markings. 3068 (XIII).

GRIBBEN, JAMES, & CO., Grand Junction, Colo.: Rock. (Returned.) 2825 (XIII).

GRINNELL, GEORGE BIRD, New York City: Skin of a Mule Deer. 3024 (I).

GRINTER, T. W., Cincinnati, Ohio: Carbon; glass carbon and other material. (Returned.) 3132, 3150 (XIII).

GUNN, JAMES, Boise City, Idaho: Minerals. 2773 (XII).

HANAFORD, S. P., Bucoda, Wash.: Ore. (Returned.) 2908 (XIII).

HANNIBAL WATER COMPANY, Hannibal, Mo.: Shells. 3232 (29553) (VI).

HAMLINE UNIVERSITY, St. Paul, through Prof. H. L. Osborn: Land and freshwater shells, and a few marine shells, from the Philippine Islands. (Returned.) 3182 (VI).

HARMANY, W. L., Pittsburg, Pa.: Facsimile of a coin in plaster. 2993 (XVII).

HARPER, J. J., Albany, N. Y.: Minerals. (Returned.) 3152 (XII).

HARRIS, Mrs. M. V., Carbon Hill, Ala.: Mineral. (Returned.) 2954 (XII).

HARRISON, C. F., Custer City, S. Dak.: Eight specimens of garnets from the Black Hills. (Returned.) 2921 (XII).

HARSHBARGER, W. A., Topeka, Kans.: North American Coleoptera. 3113 (portion returned, remainder retained, 29303) (VII).

HARTLEY, W. P., Mount Jackson, Pa.: Insect. 2970 (29043) (VII).

HASKELL, Miss B. A., Philadelphia, Pa.: Insect from Massachusetts. 3090 (29243) (VII).

HATCH, W. F., Homer, N. Y.: Mammal skin from British America. (Returned.) 2934 (I).

HATHEWAY, G. H., Palestine, Tex.: Jaw of a fish. (Returned.) 2841 (V).

HARVEY, Prof. F. L., Orono, Me.: Three mammals. 3153 (I).

HAY, F. S., U. S. Army, Fort Huachuca, Ariz.: Concretion from Fort Wingate, N. Mex. 2819 (28472) (XIII).

HAYS, T. C., Maspeth, N. Y.: Beetles. (Returned.) 2780 (VII).

HAZELDINE, Dr. M. F. W., Tampa, Fla.: Claylike substance. (Returned.) 3017 (XIII).

HEARD, W. W., Mount Carmel, S. C.: Earth. (Returned.) 2804 (XIII).

HEDGES, HENRY, Douglas, Wash.: Stones; minerals. (Returned.) 2820, 3048 (XIII, XII).

HEMPHILL, Hon. J. J., M. C.: Plant. 3217 (XI). (Transmitted in behalf of J. L. Luykendal.)

HERING, E. A., Harrisonburg, Va.: Stone with peculiar markings. 2792 (XIII).

HERMAN, W. W., Boston, Mass.: Crustaceans and echinoderms. (Returned.) 3097 (VIII).

HERRON, R. B., San Bernardino, Cal.: Five birds' skins. (Returned.) 3226 (II).

HEYDE, Rev. H. T., New Orleans, La.: Birds' skins from Central and South America. 3163, 3166 (portion returned, remainder retained, 29954) (II).

HEYMANN, S., Fayetteville, Tenn.: Phosphate and other material. 3191 (29540) (XIII).

HIGBE, Mrs. S. H., Thayne, Wyo.: Ore. 2785 (XIII).

HILL, J. B., Edgefield, S. C.: Ore. (Returned.) 2958 (XIII).

HINES, H. L., Greensboro, N. C.: Whortleberry root resembling a snake. 3095 (XI).

HOOPES, JOSIAH, West Chester, Pa.: Birds' skins. (Returned.) 2983, 3142 (II).

HOPKINS, Prof. A. D., Morgantown, W. Va.: Insects. (Returned.) 2996 (VII).

HOPSON, W. R., Bridgeport, Conn.: Insect. (Returned.) 2810 (VII).

HORR & MCFALL, Red Lodge, Mont.: Black substance from a deposit in Wyoming. (Returned.) 2770 (XIII).

HOUSE, G. E., Ulster Park, N. Y.: Fossil tooth of a mammal. (Returned.) 2844 (X–A).

HUDGIN, W. G., Hinton, W. Va.: Ore. (Returned.) 2901 (XIII).

HULING, Hon. J. H., Charleston, W. Va.: Mineral. (Returned.) 3118 (XII).

HUNTER, Mrs. L., Dayton, Ohio: Butterfly. (Returned.) 2788 (VII).

HYNDS, S. H., Gillise's Mills, Tenn.: Ore. 2849 (XIII).

INGHAM, Miss L., Philadelphia, Pa.: Insect. (Returned.) 3231 (VII).

IRWIN, Dr. J. W., Tyre, Mich.: White substance. (Returned.) 2779 (XIII).

JACKSON, J. F., Richmond, Va.: Supposed fossil fruit. (Returned.) 3186 (X–c).

JACOBS, O. B., Gilberts, Ill.: Fossil. (Returned.) 3012 (X–b).

JOHNSON, J. F., Toledo, Oreg.: Rock. 3201 (XIII).

JOHNSON, J. L., Duffield, Va.: Indian relics. 2989 (29105) (XIV).

JOHNSON, N. P. B., Nyack, N. Y.: Botanical specimen. 2896 (XI).

JOHNSON, W. H., Baker City, Oreg.: Coal. (Returned.) 3111 (XIII).

JONES, H. N., Jacksonville, Fla.: Natural formation. (Returned.) 2956 (XIV).

JONES, S. A., Washington, D.C.: Mineral. (Returned.) 2888 (XII).

KAYSER, WILLIAM, Wapakoneta, Ohio: Insects. (Returned.) 2783 (VII).

KELLEY, F. M., Phœnix, Ariz.: Mineral. 2801 (XII).

KENT, A. J., Bonners Ferry, Idaho: Mineral. 2812 (XII).

KIDD, E. Z., Deadwood, S. Dak.: Ore. (Returned.) 3181 (XIII).

KING, A., Ardenburg, Java: Two beetles found boring into a cocoa tree, and cross sections of wood showing their work. 2964 (VII).

KING, Dr. C. L., Springfield, Mo.: Insect. (Returned.) 2932 (VII).

KING, J. F., Peoria, Ill.: Two archæological objects. (Returned.) 3220 (XIV).

KIRKWOOD, F. C., Baltimore, Md.: Birds' skins. (Returned.) 2833 (II).

KLINK, C. F., Horton, Kans.: Grass. 2873 (28561) (XI).

KNIGHT, Prof. W. C., University of Wyoming, Laramie, Wyo.: Archæological objects. (Returned.) 3063 (XIV.)

KORN, S., Union House, Cal.: Insect. (Returned.) 2850 (VII).

LA FOY, A. M., Little Falls, N. J: Insect. (Returned.) 2944 (VII).

LARKIN, Mrs. J. R., Matunuck, R. I.: Portions of the backbone of a shark. 2782 (28359) (IX).

LATHAM, R. L., Lovingston, Va.: Mineral. (Returned.) 3209 (XII).

LAVERTY, Mrs. JAMES, Jamestown, N. Dak.: Pebbles. (Returned.) 3149 (XIII).

LAWS, Mrs. N. W., Oswego, Kans.: Two insects. (Returned.) 2881 (VII).

LAY, WILLIAM, Honeoye Falls, N. Y.: Specimen obtained from the interior of a lump of bituminous coal. 3109 (29193) (XIII).

LELAND, J. P., Mechanicsville, N. Y.: Twelve stone implements. (Returned.) 3056 (XIV).

LEMON, Dr. J. H., New Albany, Ind.: Two moths. (Returned.) 3225 (VII).

LERCH, Dr. OTTO, Prussia, Germany: Rocks from Nicaragua. 3214 (XIII). (Transferred to U. S. Geological Survey).

LESTER, H. C., Shady Grove, Va.: Supposed madstone. (Returned.) 3050 (XVII).

LEWIS, F. W., McLeod, Mont.: Ores. (Returned.) 3034 (XIII).

LEWMAN WILLIAM, Escalante, Utah: Ore. (Returned.) 2890 (XIII).

LINDERBORN, W. E., Thompson Falls, Mont.: Mineral. (Returned.) 3128 (XII).

LITTLEJOHN, CHASE, Redwood City, Cal.: Birds' skins from Alaska and California. (Returned.) 2914, 2922, 2969 (II). (Some of these skins were transmitted through Major Bendire, U. S. Army.)

LONERGAN, T. A., Florence, Oreg.: Supposed coal from Arizona. (Returned.) 3211 (XIII).

LOOMIS, L. M., California Academy of Sciences, San Francisco, Cal.: Birds' skins. (Returned.) 2951 (II). (See under California Academy of Sciences.)

LORET, J. F., Patterson, La.: Insect. (Returned.) 3080 (VII).

LOWE, R. E., Erwin, Tenn.: Minerals. (Returned.) 3076, 3145 (XII).

LOWE, Dr. J. H., Holum, La.: Plant; insect. (Returned.) 3085, 3154 (XI, VII).

LOWRY, W. L., Plant City, Fla.: Coin. (Returned.) 3193 (XVII).

LUCAS, G. W., Dunkirk, Ind.: Mineral; ore from Tennessee. (Returned.) 2990, 3051 (XII, XIII).

LUYKENDAL, J. L. (See under Hon. J. J. Hemphill.)

LYON, A. L., Moulton, Iowa: Stone. (Returned.) 3144 (XIII).

MCBRIDE, W. S., Marshalltown, Iowa: Two concretions. (Returned.) 2994 (XIII).

MCCARTHY, JOHN, Hermosa, S. Dak.: Cement gravel containing crystals; rock. 2977, 2842 (XIII).

MCCREERY, J. H., Oceanport, N. J.; Tooth of a shark (?) (Returned.) 2972 (IX.)

MCDANIEL, E. S., Campti, La.: Mammal skin. 2988 (I).

MCDOWELL & SONS, Washington, D. C.: Talcose slate. (Returned.) 2911 (XII).

MCILHENNY, E. A., Avery, La.: Bird. 2912 (28637) (II).

MCILWAINE, A. G., Roanoke, Va.: Supposed phosphate. 2997 (XIII).

MCKEE, J. C., Marble Falls, Tex.: Mineral. (Returned.) 3077 (XII).

MCKINLEY, C., Charleston, S. C.: Insect. (Returned.) 2925 (VII).

MCKINNON, J. D., Portland, Oreg.: Black sand. (Returned.) 2906 (XIII).

MCLAIN, R. B., Ithaca, N. Y.: Birds' eggs. 3040 (28996) (III).

MCLEAN, J. P., Greenville, Ohio: Engraved bone implement. 3022 (XIV).

MCMILLIN, Hon. BENTON, M. C.: Ore. (Returned.) 2813 (XIII).

MCNEILL, JEROME, Arkansas Industrial University, Fayetteville, Ark.: Scalp of a supposed rabbit. 3168 (I).

MCRAE, BEIL, Hopewell, N. Mex.: Ore. (Returned.) 3030 (XIII).

MAGEE, J. M., Sligo, Pa.: Ore. (Returned.) 2928 (XIII).

MAGUFFY, JOHN, Boise City, Idaho: Mineral. (Returned.) 2915 (XII).

MAHON, Hon. THADDEUS M., M. C.: Geological material. (Returned.) 3007 (XIII).

MANN, W. J., Upperville, Va.: Insect. (Returned.) 3151 (VII).

MARSHALL, GEORGE, Dayton, Ohio: Insect. (Returned.) 2889 (VII).

MATHES, K. B., St. Augustine, Fla.: Fifty-nine birds' skins. 3001 (portion returned, remainder retained, 28859) (II).

MATTHEWS, P. F., Florence, Ala.: Archæological object from Michigan. (Returned.) 3157 (XIV).

MAYFIELD, P. B., Cleveland, Tenn.: Plant, supposed to be an antidote for the bite of snakes. 2892 (XVI).

MAYER, J. C., Roundtop., Tex.: Two arrow-heads and a stone. (Stone returned, 2910; arrow-heads retained, 28662.) (XIV.)

MEEKER, Dr. J. W., Nyack-on-Hudson, N. Y.: Plants. 2893 (returned), 3189 (XI).

MILLER, CHARLES, jr., Grand Rapids, Mich.: Two specimens of minerals. (Returned.) 3005 (XII).

MILLER, JOHN, Prescott, Ariz.: Geological material. (Returned.) 2799 (XIII).

MITCHELL, Hon. J. D., Victoria, Tex.: Three crustaceans and a starfish. 2946 (returned); 2 crustaceans, 3180 (29447). (VIII.)

MOLINER, G. M., Mexico, Mexico: Sword, scabbard, and 3 copper spoons; coin; ethnological objects; blade of an ax, headless tortoise, and a few fragments of painted pottery; photograph of one of the outlines of a side of the pyramid of Hermes; silver ornament, bronze ax, small copper or bronze figure. (Returned.) 2887, 2973, 2903, 2907, 3008, 3069 (XV, XVII, XV, XV, XV, XV).

MOORE, J. P., Wayne, Pa.: Insects. (Returned.) 3178 (VII).

MOONNAN, L. C., Chaparal, Ariz.: Insect. 2931 (28798) (VII).

MORRISON, E. A., Memphis, Tenn.: Two samples of clay. (Returned.) 2808 (XIII).

MUND, A. H., Fairburg, Ill.: Two worms. 2916 (29164) (VIII–a).

MURCH, E. E., Ellsworth, Me.: Two birds' skins. (Returned.) 2800 (II).

MURPHY, JOHN, Eagleville, Nev.: Ore. 3105 (XIII).

MYER, W. E., Carthage, Tenn.: Fossil. (Returned.) 3027 (X–b).

NAGLE, Dr. J. T., Oceanic, N. J.: Larva of insect. (Returned.) 2796 (VII).

NEIL, JAMES, Coalville, Utah: Minerals. (Returned.) 2871 (XII).

NEWELL, W. L., Milan, Wash.: Two specimens of ores. 3195 (XIII).

NEWLON, Dr. W. S., Oswego, Kans.: Plate (?) of an extinct animal; fossil. 2786 (28393); 2848 (returned). (X–a, X–b.)

NIXON, H. B., Everton, Mo.: Minerals. (Returned.) 3053, 3115 (XII).

NORRIS, A. J., Marshall, Va.: Twenty-five birds' skins from the Peruvian Andes. 3047 (29298) (II).

NYE, WILLARD, New Bedford, Mass.: Plant. 3139 (XI).

ORCUTT, C. R., San Diego, Cal.: Coins and medals, 2829 (portion returned, remainder retained, 29039). (XVII.)

OSBORN, Prof. H. L. (See under Hamline University.)

OVER, C. M., Kelly, N. Mex.: Mineral. (Returned.) 3106 (XII).

PALMER, S. D., Burnsville, Ala.: Stone supposed to be of meteoric origin. 2771 (XII).

PAQUIN, MOSES, Portland, Colo.: Ore. (Returned.) 2814 (XIII).

PARKER, W. F., Davis, Ind. T.: Ore. (Returned.) 2920 (XIII).

PARKS, J. G., Ducktown, Tenn.: Copper slags, pieces of copper, fragments of pottery, and broken arrow-heads. 3082 (XIV).

PASCO, Senator. (See under J. R. Curry.)

PAYN, E. J., Olympia, Wash.: Clay. 2895 (XIII).

PAYNE, B. L., Rest, Va.: Ores. (Returned.) 2803 (XIII).

PAYNE, Hon. S. E., M. C.: Stone from Florida. (Returned.) 2832 (XIII).

PEASE, Dr. A. P. L., Massillon, Ohio: Rude chipped flint implement. (Returned.) 3059 (XIV).

PECK, S. A., Plainville, Conn.: Fungus. 2854 (XI).

PEIFFER, HENRY, Ono, Pa.: Insect. (Returned.) 2878 (VII).

PETERS, M., Deadwood, S. Dak: Minerals. (Returned.) 3098 (XII).

PETERS, THOMAS, Prescott, Ariz.: Specimens from a deposit on the Rio Verde River. (Returned.) 3067 (XIII).

PETERSON, P. H., Boundary, Wash.: Ore. 2845 (XIII).

PIERCE, W. J., Council Valley, Idaho: Ore. (Returned.) 3110 (XIII).

PISOR, J. H., Horr, Mont.: Rocks. (Returned.) 3190 (XIII).

POHL, A., Aspen, Colo.: Wax impression of a medal. 3083 (XVII).

POOLE, RICHARD, Poolesville, Md.: Mineral. 2868 (XII).

PRESTON, J. W., Baxter, Iowa: Insect. (Returned.) 3114 (VII).

PRIDEMORE, Gen. A. L., Jonesville, Va.: Beads and shells. 2938 (XIV).

PRINGLE, C. G., Charlotte, Vt.: Plants from Mexico. 3096 (portion returned, remainder retained, 29213) (XI).

PROVINCIAL MUSEUM, Halifax, Nova Scotia, through Mrs. I. H. Goudge, curator: Claw of a crab. 2937 (VIII).

RADFORD, Dr. W. B., Lakehall, Fla.: Insects. 3140 (VII).

RAGSDALE, G. H., Gainesville, Tex.: Shells of turtles. (Returned.) 2816 (IV).

RAMEY, Dr. P. T., Cascilla, Miss.: Ore. (Returned.) 2974 (XIII).

RANDOLPH, P. B., Seattle, Wash.: Land shells. 3223 (portion returned, remainder retained, 29541) (VI).

REIK, J. J., Evart, Mich.: Copper implements. (Returned.) 2776 (XIV).

RICE, Miss C. B., Malden, Mass.: Coleoptera. (Returned.) 3122 (VII).

RICHTER, E. F., Cairo, Ga.: Plant supposed to contain medicinal properties. 3204 (XVII).

RICKETTS, Miss D. E., Rockville, Md.: Insect. (Returned.) 3175 (VII).

RICKLY, A. M., Columbus, Ohio: Stone pipe from Tennessee. 3215 (29528) (XIV).

ROBERTSON, L. E., Fredonia, N. Y.: Mineral. (Returned.) 2866 (XII).

ROBINETT, S. F., Eagle Point, Oreg.: Mineral. (Returned.) 3094 (XII.)

ROBINSON, Dr. B. L., Harvard University, Cambridge, Mass.: Plants. (Returned.) 3013, 3014 (XI).

ROSENBERGER, GEORGE, St. Paul, Minn.: Butterfly. (Returned.) 3216 (VII).

ROWE, C. H., Cliftondale, Mass.: Land shells; shells. 2867 (portion returned, remainder retained, 28568); 3006 (returned) (VI).

RUSSELL, H. R., Manhattan, Ill.: Stone; grooved ax. 2882 (28563); 2991 (returned) (XIV).

RYDING, ANDREW, Salemsburg, Kans.: Piece of bone. (Returned.) 2798 (IX.)

SALLING, GUY, South Greenfield, Mo.: Prehistoric implements. 2826 (XIV).

SALVIN, OSBERT, London, England: Bird skin. (Returned.) 2998 (II).

SAUNDERS, H. R., U. S. vice-consul, Nassau, New Providence: Clay or marl. (Returned.) 2840 (XIII).

SCHELL, J. E., Frederick, Md.: Insect. (Returned.) 2859 (VII).

SCHROETER, O., Toledo, Ohio: Silver coin. (Returned.) 3137 (XVII).

SCHUYLER, Dr. R., Azalia, Mich.: Insect. (Returned.) 3155 (VII).

SCRUGGS, E. C., Nashville, Tenn.: Stone. (Returned.) 2953 (XIII).

SECKLES, L. W., Trinity, Tex.: Ore. (Returned.) 2846 (XIII).

SHARP, W. A., Boulevard, Wash.: Ores. (Returned.) 3089, 3143 (XIII).

SHIELDS, C. H., Kenton, Ohio: Insect. (Returned.) 3221 (VII).

SHRIVER, HOWARD, Cumberland, Md.: Fossils. (Returned.) 2992, 3171 (X–b).

SLEASE, C. M., Winfield, Kans.: Skull of a mammal; coal marking from the Kansas coal fields. 2949 (returned), 3107 (I, X–b).

SMITH, HARLAN I., Saginaw, Mich.: Oak leaves containing a peculiar growth; 6 shreds of fabrics. 2935, 2959 (XI, XVII).

SMITH, JOHN DONNELL, Baltimore, Md.: Two plants. (Returned.) 2955 (XI).

SOLOMON, J. B., Los Angeles, Cal.: Plaster cast of an ancient silver coin. 3011 (XVII).

SPARKS, W. T., McKenzie, Tenn.: Ore. (Returned.) 3075 (XIII).

SPENCER, V. O., Lake Worth, Fla.: Insect. (Returned.) 3045 (VII).

STEJNEGER, Dr. LEONHARD. (See under Knud Anderson.)

STEVENSON, E., Labarge, Wyo.: Plants. 2807 (28494) (XI).

STEWART, Dr. T. B., Lockhaven, Pa.: Indian relics. (Returned.) 2781, 2917, 3123 (XIV).

STRAUB, Lieut. P. F., U. S. Army, San Carlos, Ariz.: Stones. 2977 (XIII).

STUMP, W. J., Emory, W. Va.: Two stones. (Returned.) 2979 (XIII).

SUCHETET, A., Antiville-Breante, France: Two birds' skins. (Returned.) 2805 (II).

SWEENEY, P. M., Lima, Mont.: Ore. (Returned.) 3227 (XIII).

TANNER, J. J., Tooele City, Utah: Substance found in a solid rock; also piece of the rock. 3003 (XIII).

TAUSSIG, H. P., St. Louis, Mo.: Mineral. 3055 (XII).

TAYLOR, MARSHALL, Cave Creek, Ark.: Ore; rock. (Returned.) 3031, 3062 (XIII).

TERRELL, Miss OLIVIA, Waterford, Miss.: Clay. (Returned.) 2821 (XIII).

THE DRUGGISTS CIRCULAR, New York City: Plant from Mansfield, La. 3205, (XI).

THISELTON-DYER, Dr. W. T., director Royal Botanical Gardens, Kew, England: Specimens of "Arizona Tea." 3065 (XI).

THOMPSON, CHARLES, Peoria, Ill.: Stone implement. (Returned.) 3147 (XIV).

TIBBETTS BROTHERS, Tampa, Fla.: Sand-like substance. (Returned.) 2847 (XIII).

TIMNS, G. F., Washington, D. C.: Mineral oil. (Returned.) 2965 (XII).

TOMS, C. F., Hendersonville, N. C.: Mineral. (Returned.) 2834 (XII).

TOPP, L. R., Louisville, Ky.: Two specimens of clay. 3162 (XIII).

TORRE, DE LA, Dr. CARLOS, Royal University, Havana, Cuba: Quartz. 2865 (28562) (XII).

TOWNSEND, Dr. J. A., Newport, Oreg.: Plants. 3203 (29514) (XI).

TOWNSEND, O. D., Isle St. George, Ohio: Copper idol found in Canada. (Returned.) 2913 (XIV).

TRACY, HUGH, Morocco, Ind.: Rocks. (Returned.) 3121 (XIII).

TRACY, H. C., Oberlin College, Oberlin, Ohio: Bird skin from Pennsylvania. (Returned.) 2898 (II).

TREMBLY, J. M., Wood, Ohio: Shells. 2940 (VI).

TRENT, JOHN, Dudley, Tex.: Tooth and portion of vertebra. (Returned.) 3019 (IX).

TRISTÁN, Señor J. FID. (See under Costa Rica, National Museum of.)

TROSTLER, I. S., Omaha, Nebr.: Part of a skeleton from Iowa. (Returned.) 3219 (IX.)

TURNER, L. M., Seattle, Wash.: Mineral. (Returned.) 2942 (XII).

TURNER, W. C., Postoak Springs, Tenn.: Ore. (Returned.) 2872 (XIII).

TWYMAN, Dr. E. W., Twymans Mills, Va.: Insect. (Returned.) 2861 (VII).

VAN VLIET, Dr. F. C., Shrewsbury, N. J.: Stone. (Returned.) 2879 (XIII).

VANCE, T. C. H., Louisville, Ky.: Clay-like substance from Florida. (Returned.) 3120 (XIII).

VELIE, Dr. J. W., St. Joseph, Mich.: Two mice from Florida; land crabs. (Returned.) 2932, 2967 (I, VIII).

VINCENT, G. M., Thayer, Mo.: Rock. 2948 (XIII).

VOWLES, J. J., Washington, D. C.: Minerals. (Returned.) 2939 (XII).

WALKER, CHARLES, Belton, Tex.: Fossil. 2791 (28394) (X-b).

WALL, R. L., jr., Interlachen, Fla.: Insect. (Returned.) 3061 (VII).

WANEN, H. M., Enterprise, Kans.: Two insects. (Returned.) 3174 (VII).

WARD, F. A., Ward's Natural Science Establishment, Rochester, N. Y.: Twenty-one Humming Birds. (Returned.) 2985 (II).

WARD'S NATURAL SCIENCE ESTABLISHMENT, Rochester, N. Y.: One hundred and fifty-four birds' skins from Borneo; mounted mammals. 2857 (portion returned, remainder retained, 28550); 2828 (29784) (II, I).

WARING, I. S., Crichton, Idaho: Clay. (Returned.) 2883 (XIII).

WARNER, C. C., Turrialba, Costa Rica: Mineral. (Returned.) 3060 (XII).

WASHINGTON, A. F., St. Joseph, Mo.: Oil from Fremont County, Wyo. (Returned.) 2777 (XIII).

WATKINS, G. W., Moriah, N. Y.: Mineral. (Returned.) 2978 (XII).

WATTS, CHARLES, Caldwell, Kans.: Bead. (Returned). 3229 (XIV).

WEBB, Miss CARRIE, Branchtown, Pa.: Petrified nut (?). 2899 (28597) (X-c.)

WEBB, I. A., Deadwood, S. Dak.: Ore. (Returned.) 3026 (XIII).

WEBB, J. S., Mount Arorat Farm, Va.: Plant. 3138 (XI).

WEBB, W. F., Albion, N. Y.: Birds' skins from Texas, Central America, West Indies, and Mexico; 24 birds' skins from eastern Mexico; 2 squirrel skins from Mexico, with skulls, and 9 birds' skins; 23 birds from Mexico; skins and skulls of squirrels and mice. 2897 (returned); 2961 (returned); 2986 (birds' skins returned and squirrel skins retained, 29357); 2995 (portion returned and remainder retained, 28880); 3004 (29357) (II, II, I, II, II, I).

WECKSESSER, G. A., Mount Vernon, Ind.: Tooth of a mammal. (Returned.) 3160 (IX).

WELLBORN, D. A., Pilotpoint, Tex.: Insect. 3212 (VII).

WESTRAY, W. P., Harreldsville, Ky.: Mineral. (Returned.) 3158 (XII).

WHEELER, Mrs. W. M., Oakdam, Ind.: Insect. (Returned.) 2839 (VII).

WHITE, Mrs. U. B., Elyria, Ohio: Ethnological objects from India. 3141 (29407) (XV).

WHITEHORN, G. W., Rochester, Nebr.: Insect. (Returned.) 3235 (VII).

WHITING, Prof. C. A., University of Utah, Salt Lake City, Utah: Snake. (Returned.) 3196 (IV).

WILLIAMS, Prof. H. S. (See under W. S. Gressley.)

WILLIS, Miss NELLIE, Oakland, Fla.: Insect. (Returned.) 2963 (VII).

WILVERT, EMIL, Sunbury, Pa.: Ore. (Returned.) 3023 (XIII).

WILSON, Miss M. E. V., Kansas City, Mo.: Substance found on the beach at Santa Monica, Cal. (Returned.) 3217 (VIII).

WINDER, W. A., Covelo, Cal.: Insect. 2864 (VII).

WISE, F. M., Washington, D. C.: Snake from St. Pierre, Martinique. (Returned.) 3210 (IV).

WOOD, Miss SARAH, Salem, Okla.: Mineral. (Returned.) 3218 (XII).

WOODARD, Hon. F. A., M. C.: Ore. (Returned.) 3103 (XIII).

WOODING, Dr. B. F., Denver, Colo.: Ore. 3200 (XIII).

WOODRUFF, F. M., Chicago Academy of Sciences, Chicago, Ill.: Birds' skins. (Returned.) 3057 (II).

WORTHEN, C. K., Warsaw, Ill.: Twenty-two birds' skins; 7 mammal skins. 3046 (portion returned, remainder retained, 29017); 3172 (29460) (II, I).

WRIGHTMAN, Prof. F. J., Sublimity, Oreg.: Tooth of a mammal. (Returned.) 2775 (IX).

YATES, JESSE, Atlantic City, N. J.: Fish. 2789 (V).

YECKLEY, W. T., Navajoe, Okla.: Clay. 3036 (XIII).

YOUNG, F. M., St. Paul, Ark.: Two specimens of rock. (Returned.) 2823 (XIII).

YOUNT, S. E., Keystone, Nev.: Sand. 2822 (XIII).

ZIMMERMAN, J., Toms Creek, Tenn.: Ores and rocks. (Returned.) 2802 (XIII).

Index to list of specimens sent for examination and report, arranged geographically.

Source.	Number of lot.	Total.
North America:		
British America	2818, 2913, 2926, 2934, 2937, 3073, 3079, 3148	9
Central America	2897, 2955, 2971, 3060, 3163, 3166, 3214	7
Mexico	2876, 2887, 2897, 2903, 2907, 2961, 2973, 2986, 2995, 3008, 3049, 3066, 3069, 3070, 3072, 3087, 3096, 3119, 3124, 3125.	20
United States:		
Alabama	2771, 2817, 2886, 2954	4
Alaska	2914, 2922, 2968, 2969, 2987, 3042	6
Arizona	2799, 2801, 2931, 2977, 2980, 3015, 3067, 3211	8
Arkansas	2823, 2863, 3029, 3031, 3041, 3062, 3168	7
California	2829, 2837, 2850, 2864, 2914, 2923, 2938, 2951, 3011, 3074, 3081, 3099, 3100, 3127, 3184, 3226.	16
Colorado	2814, 2825, 2830, 2923, 3083, 3200, 3233	7
Connecticut	2795, 2810, 2843, 2854, 2984	5
District of Columbia	2811, 2813, 2836, 2888, 2909, 2911, 2939, 2965, 3013, 3213	10
Florida	2832, 2847, 2933, 2956, 2957, 2963, 3001, 3017, 3045, 3061, 3101, 3120, 3187, 3193.	14
Georgia	3204	1
Idaho	2773, 2812, 2883, 2915, 2952, 3002, 3043, 3064, 3110, 3156	10
Illinois	2784, 2809, 2824, 2853, 2882, 2916, 2991, 3012, 3046, 3057, 3058, 3131, 3147, 3172, 3220.	15
Indian Territory	2920, 2945	2
Indiana	2769, 2839, 2884, 2927, 2990, 3052, 3121, 3130, 3160, 3177, 3225	1
Iowa	2947, 2994, 3114, 3144, 3161, 3197, 3219	7
Kansas	2786, 2798, 2848, 2873, 2881, 2949, 3107, 3113, 8117, 3159, 3174, 3208, 3229.	13
Kentucky	3018, 3035, 3158, 3162	4
Louisiana	2912, 2988, 3080, 3085, 3154, 3205	6
Maine	2800, 2918, 3042, 3153	4
Maryland	2833, 2852, 2859, 2862, 2868, 2904, 2992, 3171, 3175	9
Massachusetts	2867, 2905, 3006, 3013, 3014, 3090, 3097, 3122, 3129, 3134, 3139, 3169.	12
Michigan	2772, 2776, 2779, 2835, 2935, 2959, 2967, 3005, 3093, 3155, 3157	11
Minnesota	2816, 2860, 3078, 3216	4
Mississippi	2821, 2974	2
Missouri	2826, 2874, 2932, 2948, 3009, 3028, 3053, 3055, 3108, 3115, 3232	11
Montana	2885, 3084, 3128, 3190, 3227	5
Nebraska	2787, 3136, 3207, 3235	4
Nevada	2822, 3105	2
New Mexico	2819, 2851, 2870, 2981, 3030, 3106, 3126, 3165, 3228	9
New Jersey	2789, 2796, 2879, 2944, 2972, 2999, 3230	7
New York	2780, 2790, 2794, 2797, 2828, 2844, 2866, 2893, 2894, 2896, 2900, 2930, 2960, 2978, 2985, 3000, 3004, 3024, 3034, 3040, 3056, 3092, 3109, 3152, 3164, 3189.	26
North Carolina	2834, 2855, 2962, 3020, 3025, 3095, 3116, 3148	8
North Dakota	3149	1
Ohio	2783, 2788, 2815, 2831, 2889, 2940, 2950, 3016, 3021, 3022, 3039, 3059, 3088, 3112, 3132, 3137, 3150, 3221, 3224.	19
Oklahoma	3036, 3218	2
Oregon	2795, 2902, 2906, 3091, 3094, 3111, 3167, 3201, 3203	9
Pennsylvania	2781, 2793, 2869, 2878, 2898, 2899, 2917, 2928, 2943, 2958, 2970, 2983, 2993, 3007, 3023, 3068, 3123, 3133, 3176, 3178, 3202, 3231.	22
Rhode Island	2782	1
South Carolina	2804, 2858, 2880, 2925, 3038, 3217	6
South Dakota	2842, 2877, 2921, 2941, 3026, 3032, 3033, 3044, 3098, 3181	10

Index to list of specimens sent for examination and report, etc.—Continued.

Source.	Number of lot.	Total.
North America—Continued.		
United States—Continued.		
Tennessee	2802, 2808, 2849, 2872, 2875, 2892, 2953, 3027, 3051, 3075, 3076, 3077, 3082, 3145, 3191, 3199, 3215.	17
Texas	2791, 2816, 2841, 2846, 2856, 2897, 2910, 2924, 2946, 3019, 3148, 3170, 3180, 3185, 3192, 3206, 3212.	17
Utah	2778, 2871, 2890, 2936, 3003, 3104, 3196	7
Virginia	2774, 2792, 2803, 2838, 2861, 2891, 2989, 2997, 3050, 3135, 3138, 3146, 3151, 3186, 3198, 3209.	16
Washington	2820, 2827, 2845, 2895, 2908, 2929, 2942, 2975, 2976, 3010, 3037, 3048, 3086, 3089, 3102, 3143, 3195, 3222, 3223.	19
West Virginia	2901, 2966, 2979, 2996, 3118	5
Wisconsin	3179	1
Wyoming	2770, 2777, 2785, 2807, 2982, 3063, 3071, 3194	8
Islands in the Pacific Ocean	2806, 3173, 3183	3
West Indies	2840, 2865, 2897, 3210	4
South America	3047, 3163, 3166	3
Europe	2805, 2919, 2998, 3040, 3042, 3065	6
Asia	3141	1
Oceanica	2857, 2894, 2964, 2998, 3182, 3234	6
Total		479

Number of lots of specimens referred to the departments in the Museum for examination and report.

Department.	Number of lots.
Mammals	13
Birds	51
Birds' eggs	1
Reptiles and batrachians	10
Fishes	5
Mollusks	9
Insects	70
Marine invertebrates	8
Helminthology	2
Comparative anatomy	10
Paleontology	21
Botany	24
Minerals	57
Geology	122
Prehistoric anthropology	37
Ethnology	9
Arts and industries	18
Total	467

APPENDIX VII.

Lectures and Meetings of Societies.

The titles of the lectures delivered and of the papers read at the meetings of the various associations which have held their sessions in the lecture hall of the museum during the year, are here presented.

PROGRAMME OF THE TENTH ANNUAL MEETING OF THE AMERICAN HISTORICAL ASSOCIATION, DECEMBER 26–28, 1894.

Wednesday, December 26.

OPENING SESSION, 8 P. M.

1. Beginning of the idea of imperial federation. Prof. George B. Adams, Yale University.
2. The historical work of Prof. Herbert Tuttle. Herbert B. Adams, Johns Hopkins University.
3. Turning points in the American civil war. Rossiter Johnson, Ph. D., LL. D., New York City.
4. Tributes to Hon. John Jay, Hon. Robert C. Winthrop, and President James C. Welling. Gen. James Grant Wilson, New York City.

Thursday, December 27.

MORNING SESSION.

1. The Tejas: Their habits, government, and superstitions. Mrs. Lee C. Harby, of New York.
2. Why Coronado went to New Mexico in 1540. George Parker Winship, Harvard University.
3. The Casa de Contratacion of Seville. Prof. Bernard Moses, University of California.
4. Some European modifications of the jury system. Dr. Walter B. Scaife, Geneva, Switzerland.
5. The Regulators of North Carolina (1766–1771). Prof. John S Bassett, Trinity College, Durham, N. C.
6. A chapter in the life of Charles Robinson, the first governor of Kansas. Prof. Frank W. Blackmar, University of Kansas.
7. The Continental Congress: A neglected portion of American Revolutionary history. Dr. Herbert Friedenwald, Philadelphia.
8. Origin and development of the labor movement in English national and municipal politics. Edward Porritt, Farmington, Conn.
9. American political philosophy. Prof. William A. Dunning, Columbia College.

EVENING SESSION.

1. The Papal and the Imperial electoral colleges. Prof. E. Emerton, Harvard University.
2. The first committee of public safety: Its organization, policy, and fall. Prof. Henry E. Bourne, College for Women, Western Reserve University, Cleveland.
3. The Quebec bill and the American Revolution Ass. Prof. Victor Coffin, University of Wisconsin.
4. The historical archives of the State Department. Andrew Hussey Allen, chief of Bureau of Rolls and Library, Department of State, Washington, D. C.
5. The German Emperor. Prof. Richard Hudson, University of Michigan.

FRIDAY, DECEMBER 28.

MORNING SESSION.

1. Appeals from Rhode Island courts to the King in council. Harold D. Hazeltine, Brown University.
2. Rhode Island and the impost of 1781. Frank Greene Bates, Cornell University.
3. The constitutional controversy in Rhode Island in 1841. Arthur May Mowry, Harvard University.
4. Party struggles over the Pennsylvania Constitution, 1775–1790. Samuel B. Harding, Harvard University.
5. Pennsylvania Germans: Their language, manners, history, and customs. S. M. Sener, Lancaster, Pa.
6. Evolution of township government in Ohio. James A. Wilgus, Ohio University, Columbus.
7. The retention of the western posts by the British after 1783. Prof. A. C. McLaughlin, University of Michigan.
8. Existing autographs of Christopher Columbus. William E. Curtis, Washington, D. C.

EVENING SESSION.

1. Mountains and history. Prof. Edmund K. Alden, Packer Institute, Brooklyn.
2. Causes and consequences of the party revolution of 1800. Prof. Anson D. Morse, Amherst College.
3. The tennis court oath. Prof. James H. Robinson, University of Pennsylvania.
4. The Royal Society of Canada and its associated historical societies. J. G. Bourinot, C. M. G., F. R. S. C., clerk of the Canadian House of Commons.
5. What the United States Government has done for history. A. Howard Clark, U. S. National Museum.

PAPERS READ AT THE MEETING OF THE NATIONAL SCIENCE CLUB, JANUARY 3, 1895.

I. How to observe birds. Miss Florence A. Merriam.
II. Women in science. Mrs. Rosa S. Eigenmann. (Read by Mrs. Horatio King.)
III. Recent excavations in Greece. Mrs. M. E. Boyce. (Read by Mrs. Mark Harrington.)
IV. Parasitic fungi on epidermis. Dr. Anna Searing.
V. (*a*) Trichomes, (*b*) Seeds, (*c*) Wild flowers of Illinois. Mrs. M. M. Boyce.
VI. The flower with iron mask. Miss E. J. Has Brouck. (Read by Miss Herschell Main.)
VII. Seaside studies. Mrs. L. O. Talbott.
VIII. Algæ outline. Miss Cora H. Clarke.
IX. Las Vegas. Mrs. M. Salazar. Read by Miss Isabel Lenman.
X. Zinc mine in New Jersey. Miss J. Husson.
XI. Geological formation of Hyde Park, Mass. Miss Ella F. Boyd.

XII. Sanitary cooking. Mrs. H. Fauquhar.
XIII. Natural resources of Loudoun County, Va. Mrs. L. O. Talbott.
XIV. Pathological chart. Mrs. L. O. Talbott.
XV. Flora *versus* fauna; insectivorous plants. Mrs. Lydia Diller Zell.
XVI. Observations in meteorology and ornithology. Mrs. Louise Stephenson.
XVII. Motherhood. Mrs. Harriett Lincoln Coolidge.
XVIII. Remarks on a collection from Koptos recently received from Mr. Flinders-Petrie. Mrs. Sara Y. Stephenson.
XIX. Principles of inference. Miss Ellen Hayes.
XX. Science of languages. Helen L. Webster, Ph. D.
XXI. Memoir of Mrs. Asaph Hall. Mrs. Horatio King.
XXII. Outline for study in botany. Mrs. Ellen Weir Cathcart.
XXIII. Mosses. Mrs. Elizabeth G. Britton.

LIST OF PAPERS ENTERED TO BE READ AT THE MEETING OF THE NATIONAL ACADEMY OF SCIENCES IN APRIL, 1895.

I. On some variations in the genus *Eucope*. Prof. A. Agassiz and W. McM. Woodworth.
II. Notes on the Florida reef. Prof. A. Agassiz.
III. The progress of the publications on the expedition of 1891 of the U. S. Fish Commission steamer *Albatross*, Lieut. Commander Z. L. Tanner, commanding. Prof. A. Agassiz.
IV. On soil bacteria. M. P. Ravenel (introduced by Dr. J. S. Billings).
V. A linkage showing the laws of the refraction of light. A. M. Mayer.
VI. On the color relations of atoms, ions, and molecules. M. Carey Lea.
VII. Mechanical interpretation of the variations of latitude. R. S. Woodward (introduced by S. C. Chandler).
VIII. On a new determination of the nutation-constant, and some allied topics. S. C. Chandler.
IX. On the secular motion of a free magnetic needle. L. A. Bauer (introduced by Prof. Cleveland Abbe).
X. On the composition of expired air, and its effect upon animal life. Dr. J. S. Billings.
XI. Systematic catalogue of European fishes. Dr. Theodore Gill.
XII. The extinct Cetacea of North America. Prof. E. D. Cope.
XIII. On the application of a percentage method in the study of the distribution of oceanic fishes. Dr. G. Brown Goode.
  A. Definition of eleven faunas and two subfaunas of deep-sea fishes.
  B. The relationships and origin of the Caribbeo-Mexican and Mediterranean subfaunas.
XIV. On the two isomeric chlorides of ortho-sulpho-benzoic acid. Ira Remsen.
XV. On some compounds containing two halogen atoms in combination with nitrogen. Ira Remsen.
XVI. Presentation of the Watson medal to Mr. Seth C. Chandler, for his researches on the variation of latitudes and on variable stars, and for his other works in astronomy.
XVII. Biographical memoir of Dr. Lewis M. Rutherfurd. B. A. Gould.
XVIII. Relation of Jupiter's orbit to the mean plane of four hundred and one minor planet orbits. H. A. Newton.
XIX. Orbit of Miss Mitchell's comet, 1847, VI, H. A. Newton.

TITLES OF SATURDAY LECTURES FOR 1895.

COURSE 1.—*Anthropology.*

February 23.—What is the science of demology? Maj. J. W. Powell.
March 2.—Human growth. Dr. Franz Boas.
March 9.—The founding of sociology. Lester F. Ward.
March 16.—The progress of the scientific method. W J McGee.
March 23.—The growth of arts. Frank Hamilton Cushing.

COURSE 2.—*Geology.*

March 30.—The continent in Algonkian time. Prof. C. R. Van Hise.
April 6.—The continent in Cambrian and Silurian time. Hon. Charles D. Walcott.
April 13.—The continent in Devonian time. Marius R. Campbell.
April 20.—The continent in Cretaceous and Tertiary time. G. K. Gilbert.
April 27.—The continent in Glacial and recent time. Prof. William B. Clark.

APPENDIX VIII.

FINANCE, PROPERTY, SUPPLIES, AND ACCOUNTS.

The appropriations for the fiscal year ending June 30, 1895, were as follows:

For continuing the preservation, exhibition, and increase of the collections from the surveying and exploring expeditions of the Government and from other sources, including salaries or compensation of all necessary employees, $143,000.

For cases, furniture, fixtures, and appliances required for the exhibition and safe-keeping of the collections of the National Museum, including salaries or compensation of all necessary employees, $10,000.

For printing labels and blanks and for the Bulletins and annual volumes of the Proceedings of the National Museum, $11,000.

For binding scientific books and pamphlets presented to and acquired by the National Museum library, $1,000.

For expenses of heating, lighting, electrical, telegraphic, and telephonic service for the National Museum, $13,000.

For postage stamps and foreign postal cards for the National Museum, $500.

For tearing down and rebuilding the brick walls of the steam boilers, providing tie rods and buck staves and grates for the same, removing, replacing, and resetting the fronts, and replacing wornout boiler tubes, and for covering heating pipes with fireproof material, including all necessary labor and material, $4,000.

For rent of workshops for the National Museum, $600.

On the 1st day of July, 1894, the National Museum had to its credit the following sums, viz: Appropriation for 1893 (balance), $329.28; appropriation for 1894 (balance), $6,165.03; appropriation for 1895, $171,000, making a total of $177,594.31. This amount was divided among the different appropriations as follows:

Preservation of collections:		
1893	$318.02	
1894	4,180.20	
1895	143,000.00	
		$147,498.22
Furniture and fixtures:		
1893	.16	
1894	803.24	
1895	10,000.00	
		10,803.40

Heating and lighting:		
1893	$11.10	
1894	724.30	
1895	13,000.00	
		$13,735.40
Building repairs, 1895		4,000.00
Rent of work shops:		
1894	457.29	
1895	600.00	
		1,057.29
Postage, 1895		500.00
Total		177,594.31

From the unexpended balances of the appropriations for 1893 and 1894 remaining on hand at the close of the last fiscal year the following expenditures have been made in payment of liabilities contracted in the years for which the appropriations were applicable, viz:

Preservation of collections, 1893.—For special or contract services, 75 cents; supplies, $39; specimens, $276, making a total of $315.75, and leaving a balance of $2.27.

The above amount, together with the sum of 16 cents, the unexpended balance of the appropriation for furniture and fixtures, and $11.10, the unexpended balance of the heating and lighting fund, will, under the law, revert to the Treasury, there being no other outstanding claims against the appropriation.

Preservation of collections, 1894.—For salaries or compensation, $165; special or contract services, $489.21; supplies, $960.58; stationery, $132.78; freight and cartage, $697.79; travel, $122.42; specimens, $756.19; books and periodicals, $620.96; total, $3,944.93.

Furniture and fixtures, 1894.—For exhibition cases, $84; frames, stands, etc., $62.70; glass, $40; hardware, $35.15; tools, $5; cloth, cotton, etc., $48.75; lumber, $72.35; paints, oils, and glue, $111.26; office and hall furniture, etc., $330.66; metals, $6.05; leather and rubber, $4.98; apparatus, $2.25; total, $803.15.

Heating and lighting, 1894.—For special or contract services, $6.25; coal and wood, $24.75; gas, $78.50; telephones, $165.50; electrical supplies, $50.60; rental of call boxes, $20; heating supplies, $348.48; telegrams, $29.46; total, $723.54.

The expenditures made from the funds appropriated for the fiscal year ending June 30, 1895, have been as follows:

Preservation of collections.—For salaries or compensation, $126,142.26; special or contract services, $3,381.24; supplies, $2,276.56; stationery, $811.62; freight and cartage, $1,469.98; travel, $585.64; specimens, $2,367.14; books and periodicals, $1,014.68; total, $138,049.12.

Furniture and fixtures.—For salaries or compensation, $5,609.20; special or contract services, $86.13; designs and drawings, $91.25; drawers, trays, and boxes, $671.79; frames, stands, etc., $67; glass, $45.90; hardware, etc., $510.30; tools, $63.69; cloth, cotton, etc., $20;

glass jars, bottles, etc., $248.32; lumber, $1,108.22; paints, oils, glue, etc., $450.14; office and hall furniture, etc., $122.73; metals, $47.16; leather and rubber, $18.80; iron brackets, $141.94; total, $9,302.57.

The following is a list of cases, furniture, etc., purchased during the year: One quartered-oak drawer cabinet, $125; one quartered-oak desk, $93; one suspension ladder and truck, $25; three typewriting machines, at $85, $87.75, and $90, respectively; one oak stepladder, $2; one oak washstand, $6; two hundred sub-unit trays, $64.

The following is a partial list of cases, furniture, and fittings constructed in the Museum shops during the year: Ten exhibition cases, four office bookcases, nine storage cases, twenty-two unit drawers, two doors, four ladders, six screens, seven thousand four hundred label holders, sixteen metal pans, one sash, fourteen label frames, fifteen bases, one thousand five hundred exhibition blocks, fifty-five packing boxes, and sixty-seven boxes for other purposes.

The following is a partial list of cases, furniture, fittings, etc., repaired and altered: Seven bases, eight unit boxes, eight metal buckets, twenty-four exhibition cases, eight chairs, three desks, seventeen doors, thirteen drawers of desks, etc., eight unit drawers, three label frames, fifty-two locks, six sash, seven screens, eleven skylights, and four windows.

Other incidental work was attended to as follows: Unit boxes varnished, 20; fire buckets painted, 30; fire buckets lined, 3; exhibition cases painted, 96; exhibition cases glazed, 22; exhibition cases varnished, 7; exhibition cases provided with castors, 24; doors fitted, 36; doors painted, 3; desk drawers fitted, 12; unit drawers provided with paper bottoms, 198; unit drawers fitted, 971; label frames varnished, 17; picture frames varnished, 2; locks placed on cases, desks, etc., 32; sash glazed, 2; sash painted, 2; screens painted, 23; skylight glazed, 1; windows painted, 11; windows glazed, 41.

Heating and lighting.—For salaries or compensation, $6,177.43; special or contract services, $51.25; coal and wood, $2,791.90; gas, $1,455.88; telephones, $444; electrical supplies, $210.75; rental of call boxes, $90; heating supplies, $327.41; telegrams, $6.31; total, $11,554.93.

Repairs to buildings.—Services, $662.13; brickwork (by contract), $1,378; boiler tubes, $594; boiler compound, $56; polishing compound, $8.75; iron water headers, $200; iron grate bars, $109.78; magnesia pipe covering, $916.20; pipe fittings, $18.88; asphaltum and bronze, $2.50; plastering, $7.80; advertising proposals, $32.67; total, $3,986.71.

Rent of workshops.—For lumber, $29.75; rent, $975; total, $1,004.75.

Postage.—For postage stamps, etc., $500.

The foregoing expenditures leave unexpended balances for the years ending June 30, 1894, and June 30, 1895, with which such indebtedness as was created during those fiscal years and still remains outstanding, may be liquidated, as follows: Fiscal year 1894, $236.12; fiscal year 1895, $7,159.21. These balances are divided as follows, viz:

Appropriation for 1894.—Preservation of collections, $235.27; furniture and fixtures, 9 cents; heating and lighting, 76 cents; total, $236.12.

Appropriation for 1895.—Preservation of collections, $4,950.88; furniture and fixtures, $697.43; heating and lighting, $1,445.07; building repairs, $13.29; rent of workshops, etc., $52.54; total, $7,159.21.

The amount appropriated for printing and binding for the National Museum for the fiscal year covered by this report was $12,000. The expenditures have been as follows:

For Bulletins Nos. 39, 47, 48, and Special Bulletins Nos. 2 and 3, $6,202.53; Proceedings (Vol. XVII), $3,179.93; Reports (extras), $28.06; labels for specimens, $234.78; letter heads, pads, and envelopes, $610.18; blank forms, $413.60; electros, $14.50; binding, $1,258.60; Congressional Records, $20, making a total of $11,962.18, and leaving an unexpended balance of $37.82.

APPENDIX IX.

Lists of Duplicate Specimens Prepared for Distribution to Educational Establishments since 1890.[1]

Within the past five years collections of minerals, fishes, casts of prehistoric implements, rocks and ores, and marine invertebrates have been distributed among a limited number of educational establishments in the United States. Although numerous applications from high schools and the smaller colleges have been received, it has been found necessary, as a rule, to decline compliance. It is hoped, however, that before many years the Museum will be enabled to separate the duplicate material in all of its departments and make it up into sets. When this has been done, it will doubtless be possible to extend the scope of distribution so as to include those grades which have not hitherto been supplied.

Labels for Duplicate Minerals Distributed by the Smithsonian Institution on Behalf of the National Museum.

[Prepared under the direction of Prof. F. W. Clarke, Honorary Curator, Department of Minerals.]

Native Sulphur [S].

[Crystallization—Orthorhombic.]

Humboldt County, Nev. 1

Siderite or Spathic Iron [$FeCO_3$].

[Crystallization—Rhombohedral.]

Germany. 2

Galena [PbS].

[Crystallization—Isometric.]

Calcite, $CaCO_3$, is associated with galena in this specimen.

Pego Mine, Portugal. 3

Sphalerite or Zinc Blende [ZnS].

[Crystallization—Isometric.]

This specimen of granular sphalerite contains pyrite, FeS_2, as an inclusion.

Friedensville, Pa. 4

Halite or Rock Salt [NaCl].

[Crystallization—Isometric.]

Rio Virgin Mine, Lincoln County, Nev. 5

Chalcopyrite [$CuFeS_2$].

[Crystallization—Tetragonal.]

This specimen contains a small quantity of nickel, probably as sulphide, and is used as an ore of nickel.

Norway. 6

Pyrargyrite [Ag_3SbS_3].

[Crystallization—Rhombohedral.]

Though the body of this specimen is quartz, SiO_2, it contains enough of the pyrargyrite, with its associate, proustite, Ag_3AsS_3, to make it a valuable ore of silver.

Manhattan Mines, Lander County, Nev. 7

Garnet [$Al_2R''_3(SiO_4)_3$].

[Crystallization—Isometric.]

In this specimen massive garnet is associated with amphibole, $R''SiO_3$.

Trotter Mine, Franklin, N. J. 8

Magnetite [Fe_3O_4].

[Crystallization—Isometric.]

Paisberg, Sweden. 9

[1] The majority of the collections contained only a portion of the specimens indicated upon these lists.

CORUNDUM [Al_2O_3].

[Crystallization—Rhombohedral.]

Belts Bridge, Iredell County, N. C. 10

TOURMALINE, var. RUBELLITE [$AlR'_6BO_2(SiO_4)_3$]

[Crystallization—Rhombohedral.]

This mineral, with albite, $AlNaSi_3O_8$, is present as an inclusion in lepidolite, $Al_2KLi(SiO_3)F_2$.

Rumford, Me. 11

MICACEOUS HEMATITE [Fe_2O_3].

[Crystallization—Rhombohedral.]

Marquette, Mich. 12

MAGNETITE [Fe_3O_4].

[Crystallization—Isometric.]

This variety is known by the miners as "shot ore."

Mineville, Essex County, N. Y. 13

MASSIVE FRANKLINITE [$ZnFe_2O_4$].

[Crystallization—Isometric.]

Trotter Mine, Franklin, N. J. 14

QUARTZ CRYSTALS [SiO_2].

[Crystallization—Rhombohedral.]

Crystal Mountain, near Hot Springs, Ark. 15

QUARTZ, var. AGATIZED WOOD [SiO_2].

[Crystallization—Rhombohedral.]

Sections of this material are cut transversely through the log into slabs, which are highly polished, and offered for sale, the best at as high a price as $800.

Chalcedony Park, Ariz. 16

AMPHIBOLE, var. ACTINOLITE [(Ca, Mg) SiO_3].

[Crystallization—Monoclinic.]

This mineral is associated with talc, $Mg_3H_2(SiO_3)_4$, as its matrix.

Belts Bridge, Iredell County, N. C. 17

RHODONITE, var. FOWLERITE [(Mn, Fe, Zn)SiO_3].

[Crystallization—Triclinic.]

Epidote, $Al_3(Ca, Fe)_2HSi_3O_{13}$, and rothoffite, $Ca_3Fe_2(SiO_4)_3$, a species of garnet, are present as inclusions in the fowlerite.

Trotter Mine, Franklin, N. J. 18

BERYL [$Al_2Gl_3(SiO_3)_6$].

[Crystallization—Hexagonal.]

Ray's Mica Mine, Yancey County, N. C. 19

WILLEMITE [Zn_2SiO_4].

[Crystallization—Rhombohedral.]

This mineral is associated with franklinite, $ZnFe_2O_4$, and zincite, ZnO. Together they form one of the largest and most valuable deposits of zinc ore in the world.

Taylor Mine, Franklin, N. J. 20

ENSTATITE, var. BRONZITE [(Mg, Fe)SiO_3].

[Crystallization—Orthorhombic.]

Webster, Jackson County, N. C. 21

LEPIDOLITE [$Al_2KLi(SiO_3)_3F_2$].

[Crystallization—Monoclinic.]

Auburn, Me. 22

ALBITE [$AlNaSi_3O_8$].

[Crystallization—Triclinic.]

Mica Mines, Amelia, Va. 23

MICROLINE, var. AMAZONSTONE [$AlKSi_3O_8$].

[Crystallization—Triclinic.]

This variety is susceptible of a high polish, and is used for making paper weights and ornaments.

Mica Mines, Amelia, Va. 24

KYANITE [Al_2SiO_5].

[Crystallization—Triclinic.]

Black Mountain Station, Buncombe County, N. C. 25

BARITE OR HEAVY SPAR [$BaSO_4$].

[Crystallization—Orthorhombic.]

Tennessee. 26

LIMONITE [$Fe(OH)_3$].

[Amorphous.]

Salisbury, Conn. 27

SERPENTINE [$Mg_3H_4Si_2O_{10}$].

[Amorphous.]

This serpentine results as an alteration from a variety of pyroxene, $RSiO_3$.

Near Montville, Morris County, N. J. 28

MASSIVE APATITE [$Ca_5(PO_4)_3F$].

[Crystallization—Hexagonal.]

This material is ground up and treated with sulphuric acid to prepare it for use as a fertilizer.

Krageröe, Norway. 29

ROSE QUARTZ [SiO_2].

[Crystallization—Rhombohedral.]

Paris, Me. 30

TURQUOISE [$Al_4(OH)_6(PO_4)_2.H_2O$].

[Amorphous.]

The matrix of this mineral is a felspathic rock. This locality has afforded many fine gems.

Los Cerillos, New Mexico. 31

DUFRENITE [$Fe_2(OH)_3PO_4$].

[Crystallization—Orthorhombic.]

Irish Creek, near Lexington, Va. 32

ULEXITE [$NaCaB_5O_9.6\,H_2O$].

[Crystallization—Unknown.]

Rhodes' Marsh, Esmeralda County, Nev. 33

GYPSUM [$CaSO_4.2H_2O$].

[Crystallization—Monoclinic.]

This material is ground up and used as a fertilizer known as "land plaster."

Windsor, Nova Scotia. 34

PINK CALCITE [$CaCO_3$].

[Crystallization—Rhombohedral.]

Franklin, Sussex County, N. J. 35

THERMONATRITE [$Na_2H_2CO_4$].

[Crystallization—Orthorhombic.]

This mineral, known commercially as crude carbonate of soda, is used principally in the manufacture of soap, glass, and paper. It is also used in bleaching, dyeing, calico printing, the manufacture of baking powders and washing soda, and in many other chemical operations.

Churchill County, Nev. 36

MUSCOVITE [$Al_3KH_2(SiO_4)_3$].

[Crystallization—Monoclinic.]

This specimen contains beautiful dendritic inclusions of magnetite, Fe_3O_4.

Pennsbury, Pa. 37

CHROMITE [$FeCr_2O_4$].

[Crystallization—Isometric.]

This is the ore from which chromic acid and the various salts of chromium are obtained.

Webster, Jackson County, N. C. 38

BEAUXITE [$Al_2Fe_2O_3.2H_2O$].

[Amorphous.]

Floyd County, Ga. 39

WERNERITE [$(CaNa_2)Al_2(SiO_4)_2$].

[Crystallization—Tetragonal.]

Bolton, Mass. 40

PYRITE [FeS_2].

[Crystallization—Isometric.]

This specimen contains a small quantity of nickel, probably as sulphide, and is used as an ore of nickel.

Norway. 41

PYRRHOTITE [Fe_7S_8].

[Crystallization—Hexagonal.]

This pyrrhotite is nickeliferous, and affords most of the nickel produced in the United States.

Gap Mine, Lancaster County, Pa. 42

OPAL, var. GEYSERITE [$SiO_2.Aq.$].

[Amorphous.]

This variety is deposited from the silicious waters of geysers in cauliflower-like and other fantastic forms around the basins and the orifices of eruption. It is frequently deposited in rounded concretions and on roots, leaves, and limbs of trees.

Yellowstone National Park, Wyo. 43

CALCITE, var. CALCAREOUS TUFA [$CaCO_3$].

[Crystallization—Rhombohedral.]

Yellowstone National Park, Wyo. 44

ZIRCON CRYSTALS [$ZrSiO_4$].

[Crystallization—Tetragonal.]

The zircons of this locality are extensively mined, and used in the manufacture of the Welsbach incandescent gas-burner.

Zircon Mines, Henderson County, N. C. 45

RUTILE [TiO_2].

[Crystallization—Tetragonal.]

This mineral is used for giving the requisite tint in the manufacture of artificial teeth. The demand for it is on the increase, and in the year 1887 one thousand pounds of it were sold to manufacturers and specimen dealers.

Swain County, N. C. 46

LEPIDOMELANE [$R'_6R''_2Al_6Si_5O_{24}$].

[Crystallization—Monoclinic.]

This mica occurs at this locality in the rock known as elæolite-syenite.

Litchfield, Me. 47

MASSIVE TOPAZ [$Al_2SiO_4F_2$].

[Crystallization—Orthorhombic.]

Transparent portions of the topaz from this locality have afforded small gems.

Stoneham, Me. 48

VESUVIANITE [$Al_4Ca_8(SiO_4)_7$].

[Crystallization—Tetragonal.]

Woodstock, Me. 49

CANCRINITE [$Al_8(SiO_4)_8(CO_4)_2CaNa_8H_6$].

[Crystallization—Hexagonal.]

This mineral is here associated with lepidomelane, $R'_6R''_2Al_6Si_5O_{24}$, in the rock known as elæolite-syenite.

Litchfield, Me. 50

ELÆOLITE [$Al_8Na_8Si_9O_{34}$].

[Crystallization—Hexagonal.]

This mineral here occurs as the chief constituent of the rock elæolite-syenite.

Litchfield, Me. 51

TRIPLITE [$(Fe, Mn)_2PO_4.F$].

[Crystallization—Monoclinic.]

Stoneham, Me. 52

SPODUMENE [$AlLi(SiO_3)_2$].

[Crystallization—Monoclinic.]

Peru, Me. 53

CHRYSOCOLLA [$CuSiO_3.2HO$].

[Crystallization—Unknown.]

Malachite, $Cu_2(CO_3)(OH)_2$, and azurite, $Cu_3(CO_3)_2(OH)_2$, are here associated with this mineral, and, together, they form an important ore of copper.

Gordon Mine, Logan County, Kans. 54

TRIPHYLITE [$FeLiPO_4$].

[Crystallization—Orthorhombic.]

Stoneham, Me. 55

CRYOLITE [$AlNa_3F_6$].

[Crystallization—Triclinic.]

This mineral, which is here associated with siderite, $FeCO_3$, is used for making soda, in the manufacture of a white, porcelain-like glass, and, to a limited extent, in the production of aluminum.

Evigtok, Arksut-Fiord, Greenland. 56

PYROLUSITE [MnO_2].

[Crystallization—Orthorhombic.]

This mineral constitutes the chief ore of manganese, and is used in the manufacture of "bleaching powder" and painters' dryers, in the production of oxygen, and to destroy the green tint in glass produced by traces of iron.

Spain. 57

LIST OF DUPLICATE FISHES DISTRIBUTED BY THE SMITHSONIAN INSTITUTION ON BEHALF OF THE NATIONAL MUSEUM.

[Prepared under the direction of Dr. Tarleton H. Bean, Honorary Curator, Department of Fishes.]

1. Chilomycterus geometricus, Kaup.
2. Lagocephalus lævigatus, L.
3. Tetrodon turgidus, Mitch.
4. Tetrodon nephelus, Goode and Bean.
5. Tetrodon testudineus, L.
6. Ostracion quadricorne, L.
7. Alutera Schœpffi, Walb.
8. Monacanthus hispidus, L.
9. Balistes capriscus, Gmelin.
10. Siphostoma fuscum, Storer.
11. Achirus fasciatus, Lacépède.
12. Aphoristia plaguisa, L.
13. Bothus maculatus, Mitch.
14. Citharichthys spilopterus, Gunther.
15. Pseudopleuronectes americanus.
16. Pleuronectes stellatus, Pallas.
17. Pleuronectes glaber, Storer.
18. Hippoglossoides platessoides, Fabricius.
19. Paralichthys dentatus, L.

19A. Paralichthys oblongus.

20. Limanda ferruginea, Storer.
21. Gadus callarias, L.
22. Microgadus tomcod, Walb.
23. Onos cimbrius, L.
24. Phycis chuss, Walb.
25. Phycis regius, Walb.
26. Phycis tenuis, Mitch.
27. Melanogrammus æglefinis, L.
28. Pollachius virens, L.
29. Brosmius brosme, Muller.
30. Merlucius bilinearis, Mitch.
31. Zoarces anguillaris, Peck.
32. Anoplarchus atropurpureus, Kittlitz.
33. Xiphister mucosus, Girard.
34. Xiphister rupestris, Jor. and Gilb.
35. Murænoides gunnellus, L.
36. Murænoides ornatus, Girard.
37. Cyclopterus lumpus, L.
38. Liparis lineata, Lepechin.
39. Gillichthys mirabilis, Cooper.
40. Apodichthys flavidus, Girard.
41. Batrachus tau, L.
42. Prionotus carolinus, L.
43. Prionotus evolans, L.
44. Prionotus strigatus, Cuv. and Val.
45. Aspidophoroides monopterygius, Bloch.
46. Triglops pingelii, Reinh.
47. Icelus uncinatus, Reinhart.
48. Cottus æneus, Mitch.
49. Cottus grœnlandicus, Cuv. and Val.
50. Cottus octodecimspinosus, Mitch.
51. Oligocottus maculosus, Girard.
52. Hemitripterus americanus, Gmelin.
53. Sebastes marinus, L.
54. Tautoga onitis, L.
55. Ctenolabrus adspersus, Walb.
56. Gerres plumieri, Cul. and Val.
57. Trichiurus lepturus, L.
58. Scomberomorus maculatus, Mitch.
59. Sarda pelamys, Gill.

60. Scomber scombrus, L.
61. Scomber pneumatophorus, De la Roche.
62. Caranx hippos, L.
63. Caranx chrysus, Mitch.
64. Chloroscombrus chrysurus, L.
65. Decapterus punctatus, Agassiz.
66. Oligoplites occidentalis, L.
67. Trachurops crumenophthalmus, Bloch.
68. Seriola zonata, Mitch.
69. Trachurus trachurus, L.
70. Trachynotus carolinus, L.
71. Selene vomer, L.
72. Stromateus triacanthus, L.
73. Stromateus paru, L.
74. Haplodinotus grunniens, Raf.
75. Cynoscion regalis, Bloch and Schneider.
76. Liostomus xanthurus, Lacepede.
77. Micropogon undulatus, L.
78. Menticirrus nebulosus, Mitch.
79. Bairdella chrysura, Lacépède.
80. Diplodus probatocephalus, Walb.
81. Stenotomus chrysops, L.
82. Lagodon rhomboides, L.
83. Orthopristis chrysopterus, L.
84. Hæmulon aurolineatum, Cuv. and Val.
85. Enneacanthus obesus, Baird.
86. Enneacanthus simulans, Cope.
87. Lepomis gibbosus, L.
88. Lepomis auritus, L.
89. Lepomis cyanellus, Raf.
90. Lepomis megalotis, Raf.
91. Lepomis pallidus, Mitch.
92. Lepomis humilis, Girard.
93. Chænobrythus gulosus, Cuv. and Val.
94. Ambloplites rupestris, Raf.
95. Micropterus dolomiei, Lacépède.
96. Micropterus salmoides, Lacépède.
97. Pomoxys sparoides, Lacépède.
98. Centropristis striatus, L.
99. Morone americana, Gmelin.
100. Roccus lineatus, Bloch.
101. Serranus fascicularis, Cuv. and Val.
102. Ammocrypta pellucida, Baird.
103. Boleosoma Olmstedi, Storer.
104. Diplesion blennioides, Raf.
105. Diplesion simoterum, Cope.
106. Etheostoma squamiceps, Jordan.
107. Etheostoma spectabilis, Agassiz.
108. Etheostoma tuscumbia, Gilb. and Swain.
109. Etheostoma Whipplei, Girard.
110. Etheostoma zonale, Cope.
111. Hadropterus evides, Jor. and Copeland.
112. Hadropterus phoxocephalus, Nelson.
113. Hadropterus scierus, Swain.
114. Perca flavescens, Mitch.
115. Stizostedium vitreum, Mitch.
116. Stizostedium canadense, Smith.
117. Pomatomus saltatrix, L.
118. Elacate canada, L.
119. Ammodytes americanus, De Kay.
120. Aphredoderus sayanus, Gilliams.
121. Sphyræna borealis, De Kay.
122. Echeneis naucrates, L.
123. Atherina stipes, Muller and Troschel.
124. Menidia vagrans, Goode and Bean.
125. Menidia notata, Mitch.
126. Menidia peninsulæ, Goode and Bean.
127. Atherinopsis californiensis, Girard.
128. Leuresthes tenuis, Ayers.
129. Mugil albula, L.
130. Mugil curema, Cuv. and Val.
131. Apeltes quadracus, Mitch.
132. Gasterosteus aculeatus, L.
133. Gasterosteus biaculeatus, Shaw.
134. Gasterosteus pungitius, L.
135. Eucalia inconstans, Kirtland.
136. Tylosurus marinus, Bloch and Schneider.
137. Hemirhamphus pleei, Cuv. and Val.
137A. Hemirhamphus rosæ.
138. Hemirhamphus unifasciatus, Ranzani.
139. Scomberesox saurus, Walb.
140. Exocœtus novæboracensis, Mitch.
141. Esox americanus, Gmelin.
142. Esox reticulatus, Le Sueur.
143. Esox vermiculatus, Le Sueur.
144. Labidesthes sicculus, Cope.
145. Umbra limi, Kirtland.
146. Umbra limi pygmæa, De Kay.
147. Cyprinodon gibbosus, Baird and Girard.
148. Cyprinodon mydrus, Goode and Bean.
149. Cyprinodon variegatus, Lacépède.
150. Fundulus heteroclitus, L.
151. Fundulus majalis, Walb.
152. Fundulus parvipinnis, Girard.
153. Fundulus seminolis, Girard.
154. Fundulus similis, Baird and Girard.
155. Gambusia punctata, Poey.
156. Girardinus metallicus, Poey.
157. Limia cubensis, Poey.
158. Fundulus catenatus, Storer.
159. Fundulus diaphanus, Le Sueur.
160. Fundulus chrysotus, Gunther.

161. Gambusia patruelis, Baird and Girard.
162. Lucania venusta, Girard.
163. Mollienesia latipinna, Le Sueur.
164. Zygonectes notatus, Raf.
165. Zygonectes henshalli, Jordan.
166. Zygonectes sciadicus, Cope.
167. Percopsis guttatus, Agassiz.
168. Synodus fœtens, L.
169. Hypomesus olidus, Pallas.
170. Mallotus villosus, Muller.
171. Osmerus mordax, Mitchill.
172. Thaleichthys pacificus, Richardson.
173. Salmo salar, L.
174. Salmo irideus, Gibbons.
175. Salmo mykiss, Walb.
176. Salmo pleuriticus, Cope.
177. Salvelinus fontinalis, Mitch.
178. Thymallus signifer tricolor, Cope.
179. Brevoortia tyrannus, Latrobe.
180. Clupea harengus, L.
181. Clupea vernalis, Mitch.
182. Clupea æstivalis, Mitch.
183. Clupea sapidissima, Wilson.
184. Eutrumeus teres, De Kay.
185. Dorosoma cepedianum, Le Sueur.
186. Stolephorus Mitchilli, Cuv. and Val.
187. Stolephorus Browni, Gmelin.
188. Stolephorus delicatissimus, Girard.
189. Stolephorus perfasciatus, Poey.
190. Stolephorus ringens, Jenyns.
191. Catostomus teres, Mitch.
192. Catostomus nigricans, Le Sueur.
193. Ictiobus cyprinella, Cuv. and Val.
194. Ictiobus velifer, Raf.
195. Ictiobus carpio, Raf.
196. Ictiobus difformis, Cope.
197. Erimyzon sucetta, Lacépède.
198. Moxostoma aureolum, Le Sueur.
199. Campostoma anomalum, Raf.
200. Carassius auratus, L.
201. Cliola vigilax, Baird and Girard.
202. Chrosomus erythrogaster, Raf.
203. Ericymba buccata, Cope.
204. Exoglossum maxillingua, Le Sueur.
205. Hybognathus nuchalis, Agassiz.
206. Hybopsis kentuckiensis, Raf.
207. Hybopsis hudsonius, De Witt Clinton.
208. Hybopsis dissimilis, Kirtland.
209. Hybopsis amblops, Raf.
210. Hybopsis storerianus, Kirtland.
211. Notemigonus chrysoleucus, Mitch.
212. Notropis analostanus, Girard.
213. Notropis boops, Gilbert.
214. Notropis camurus, Jordan and Meek.
215. Notropis coccogenis, Cope.
216. Notropis dilectus, Girard.
217. Notropis galacturus, Cope.
218. Notropis lutrensis, Baird and Girard.
219. Notropis megalops, Raf.
220. Notropis micropteryx, Cope.
221. Notropis deliciosus, Girard.
222. Notropis pyrrhomelas, Cope.
223. Notropis rubrifrons, Cope.
224. Notropis scylla, Cope.
225. Notropis stigmatura, Jordan.
226. Notropis umbratilis, Girard.
227. Notropis venustus, Girard.
228. Notropis Whipplei, Girard.
229. Notropis xænocephalus, Jordan.
230. Notropis zonatus, Agassiz.
231. Phenacobius uranops, Cope.
232. Pimephales notatus, Raf.
233. Pimephales promelas, Raf.
234. Platygobio gracilis, Richardson.
235. Rhinichthys atronasus, Mitchill.
236. Rhinichthys cataractæ, Cuv. and Val.
237. Semotilus bullaris, Raf.
238. Semotilus atromaculatus, Mitchill.
239. Amiurus albidus, Le Sueur.
240. Synaphobranchus pinnatus, Gronow.
241. Simenchelys parasiticus, Gill.
242. Petromyzon marinus, L.
243. Myxine glutinosa, L.
244. Anguilla rostrata, Le Sueur.

LABELS FOR CASTS OF PREHISTORIC IMPLEMENTS DISTRIBUTED BY THE SMITHSONIAN INSTITUTION ON BEHALF OF THE NATIONAL MUSEUM.

[Prepared under the direction of Dr. Thomas Wilson, Curator Department of Prehistoric Anthropology.]

PALEOLITHIC AGE, EUROPE.

Drift period (Sir John Lubbock, Mr. John Evans): Cave Bear period (Lartet); Chelléen epoch (de Mortillet); Alluvium (Solomon Reinach).

These implements are the earliest known to have been made by man. They are distributed in almost every quarter of the globe. They are found on the surface on hills and high table-lands, but mostly in the gravels of the river valleys, and consequently are believed to be of the same age. They are found associated with the remains of the extinct fauna of the Quaternary period and were contemporaneous therewith. The characteristic of the industry of this age is, that all the stone implements were made by chipping or flaking. Man knew not that rubbing one stone against another would sharpen or polish it.

Refer for description and bibliography to "A Study of Prehistoric Anthropology; Handbook for Beginners," Report National Museum, 1887–88, pp. 599–613, pl. LXXXVII.

CHELLÉEN IMPLEMENT.—Flint.

From the river gravels of the Little Ouse, Norfolk, England.

Original, No. 9745, in U. S. National Museum; collected by Mr. John Evans; presented by Sir William Blackmore.

CHELLÉEN IMPLEMENT.—Flint.

From the gravels of the River Somme, St. Acheul, France.

Original, No. 146623, in U. S. National Museum; collected by Monsieur Ed. d'Acy, Paris; deposited by Thomas Wilson.

CHELLÉEN IMPLEMENT.—Quartzite.

From a paleolithic workshop, Bois du Rocher, Brittany, France.

Original, No. 99531, in U. S. National Museum; collected by Judge E. Fornier, Rennes; deposited by Thomas Wilson.

PALEOLITHIC AGE, UNITED STATES.

Implements similar in form, style, and mode of manufacture to those from other countries have been found in the United States, and they seem to indicate a similar stage of culture, though the contemporaneity of neither the implements nor the stages of culture to which they belonged has yet been established so as to be universally accepted; nor has the relationship of the men who made or used them on the two hemispheres been established. Yet the fact is undoubted that the implements are practically the same. These implements have been found to the number of several hundred by Dr. Abbott in the gravels of the Delaware River, as they were washed from the glacial terminal moraine and deposited at Trenton, N. J.; by Miss Franc E. Babbitt, in the gravels of one of the terraces of the Mississippi River, at Little Falls, Minn.; by Dr. C. L. Metz, in the gravels of the Little Miami River at Loveland, Ohio; by Dr. Hilborne T. Cresson, at White River, Indiana, and in the Columbia gravels of the railway cuts south of Chester, Pa. The association and condition of these finds would seem to establish the antiquity of man's occupation in this country, and its contemporaneity with the glacial epoch at least on the Atlantic Coast. Similar implements have been discovered on the surface in almost every State. ("A Study of Prehistoric Anthropology; Handbook for Beginners," Report National Museum, 1887–88, pp. 629–636, figs. 1–9; "Results of an Inquiry as to the Existence of Man in North America," ibid., p. 677.)

PALEOLITHIC IMPLEMENT.—Quartzite.

Mount Vernon, Va.

Original, No. 1073, in U. S. National Museum; loan collection of N. S. Way.

PALEOLITHIC IMPLEMENT.—Quartzite.

Mount Vernon, Va.

Original, No. 1073 *a*, in U. S. National Museum; loan collection of N. S. Way.

STONE PICK OR AX.

These implements are found associated with, and undoubtedly were used in the manufacture of, aboriginal steatite vessels. The material differs according to locality, impure serpentine (Rhode Island), trap (Pennsylvania), quartz and quartzite (Maryland and Virginia) being the most common.

PICK OR AX.—Used in making steatite vessels. Trap.

Fremont, Pa.

Original, No. 35487, in U. S. National Museum; collected by Isaac S. Kirk.

HAMMER AND PITTED STONES.

The largest number of this class are flat or oval pebbles of quartzite, etc., which have been used by holding in the hand. The broken corners and edges, pecked and roughened by numberless strokes, are the only evidence of their use. Many

specimens show an intentional worked depression in the center of one or both sides, and in some instances this cavity is so well defined that it is difficult to draw the line between hammers and cup-stones. Some large and heavy specimens show a groove, as do the axes, which served for an attachment of a handle. These are called mauls. Other classes of hammers are the flint pebbles peculiar to Flint Ridge, Muskingum County, Ohio, and those from the Pacific Coast. (Handbook, pp. 646-648, fig. 22, Nos. 80, 81, 78, 82.)

HAMMER AND PITTED STONE.—Quartzite.

Morehouse Parish, La.

Original, No. 29172, in U. S. National Museum; collected by Dr. Benj. H. Brodnax.

RUDE NOTCHED AX.

A rough, chipped stone ax or adze, notched on both edges; many specimens showing that the notches were used by means of a withe or thong for the attachment of a handle. These are found principally on the Atlantic Seaboard from Massachusetts to Georgia. It has been suggested that they were used in making the "dug-out" canoes. (Handbook, pp. 633-635, fig. 10, pl. cv, No. b.)

RUDE NOTCHED AX.—Quartzite.

Fairfax County, Va.

Original, No. 1073, in U. S. National Museum; loan collection of N. S. Way.

GROOVED STONE AXES.

These are characteristic implements of aboriginal Indian industry in the United States, and their distribution is general. They are peculiar to this country, and do not belong to Europe. Almost the only prehistoric grooved stone implements found there are mauls used in mining or quarrying. The material in the United States differs with the locality; but granite, trap, and rocks which would not flake were used. Grooved axes are made of water-worn pebbles as well as of quarried rock. They were chipped and pecked into shape and then smoothed or polished by rubbing or grinding. Some were not polished but only pecked. The handle was attached by means of a withe or thong passing around in the groove. Grooved axes may be divided according to form, but there are no sharp divisions between the classes. Peculiar forms are to be noted, of hematite from the Mississippi Valley, or of actinolite from the pueblos of the Southwest. (Handbook, p. 647, fig. 22.)

These have been classified as follows:

I. Grooved, either wholly or partially, some with projecting wings.

II. Flat back for insertion of tightening wedge.

III. Double-bitted.

IV. Hematite.

V. Actinolite from the pueblos of the Southwest.

GROOVED STONE AX, CLASS I.—10 by 6½ by 3 inches.

Rome, Ga.

Cast, No. 31977, in U. S. National Museum. Original in Museum of Natural History, New York.

GROOVED STONE AX, CLASS I.—Granite, made from pebble.

Naples, Ill.

Cast, No. 11612, in U. S. National Museum; original collected by J. G. Henderson.

GROOVED STONE AX, CLASS I.—Porphyry.

Middleboro, Mass.

Original, No. 6542, in U. S. National Museum; collected by J. W. P. Jenks.

GROOVED STONE AX, CLASS I.—Basalt, made from pebble.

Swanton, Vt.

Cast, No. 30043, in U. S. National Museum; original collected by H. H. Dean.

STONE AX, CLASS I.

Louisville, Ky.

Cast, No. 30180, in U. S. National Museum; original collected by Dr. James Knapp.

GROOVED STONE AX, CLASS II.—Granite; large, 11 by 6½ by 3 inches.

Franklin County, Ind.

Original, No. 8206, in U. S. National Museum; collected by Wm. Shank.

GROOVED STONE AX, CLASS II.

Guernsey County, Ohio.

Original, No. 29014, in U. S National Museum; collected by W. B. Rosamond.

GROOVED STONE AX, CLASS II.—Dark greenstone.

Fort Whipple, Ariz.

Original, No. 1134, in U. S. National Museum; collected by Dr. Elliott Coues.

GROOVED STONE AX, CLASS II.—Hematite.

Pike County, Ill.

Original, No. 32646, in U. S. National Museum; collected by Brainard Mitchell.

GROOVED STONE AX, CLASS II.—Of peculiar form, round in section, sloping grooves, possibly used as a digging implement; 12¼ inches long.

Cedarburg, Wis.

Cast, No. 11641, in U. S. National Museum; original collected by F. S. Perkins.

GROOVED STONE AX, CLASS III.—Has a cutting edge at each end and a groove in the middle.

Madison, Wis.

Cast, No. 11640, in U. S. National Museum; original collected by F. S. Perkins.

POLISHED STONE HATCHETS.

These, frequently called "Celts," and erroneously "Fleshers" and "Skin-dressers," in the United States, and "Thunder" or "Lightning" stones in the Eastern Hemisphere, were possibly intended for use similar to the grooved axes; and the same remarks as to material, locality, and mode of manufacture apply to one as to the other. Although these vary greatly in form and size, yet they were practically for the same use. They were inserted in their handles as shown by No. 11479, which, though of stone, is like many others of wood. These are the representative implements of the Neolithic or Polished Stone Age, and are found throughout the prehistoric world. On the coast and islands they are often made of shell. (Handbook, p. 645, fig. 20.)

POLISHED STONE HATCHET.—Hard greenstone.

Valley of the Big Harpeth River, Tennessee.

Cast, No. 11483, in U. S. National Museum; original collected by Dr. Joseph Jones.

POLISHED STONE HATCHET.

Anne Arundel County, Md.

Cast, No. 32085, in U. S. National Museum; original collected by J. D. McGuire, esq.

POLISHED STONE HATCHET.

Rock Island, Ill.

Original, No. 26817, in U. S. National Museum; collected by Miss M. Hobart.

POLISHED STONE HATCHET.

Knox County, Tenn.

Original, No. 59239, in U. S. National Museum; collected by C. L. Stratton.

POLISHED STONE HATCHET.—Mottled jaspery slate.

Fort Wayne, Ind.

Original, No. 30818, in U. S. National Museum; collected by R. S. Robertson.

POLISHED STONE HATCHET.—Flint.

From a mound, St. Clair County, Ill.

Cast, No. 30079, in U. S. National Museum; original collected by Dr. J. F. Snyder.

POLISHED STONE HATCHET.—Chalcedony?

From the Cahokia Mound, Illinois.

Cast, No. 30205, in U. S. National Museum; original in Peabody Museum, Cambridge, Mass.

POLISHED STONE HATCHET.—Compact micaceous slate.

Lake County, Ind.

Original, No. 45742, in U. S. National Museum; collected by W. W. Cheshire.

POLISHED STONE HATCHET.—Double-headed, with handle in one piece. Green chloritic stone.

From a mound, Cumberland River, opposite Nashville, Tenn.

Cast, No. 11479, in U. S. National Museum; original collected by Dr. Joseph Jones.

POLISHED STONE HATCHET.—Greenstone.

Groveport, Ohio.

Original, No. 7745, in U. S. National Museum; collected by W. R. Limpert.

POLISHED STONE HATCHET.—Syenite.

Swanton, Vt.

Cast, No. 30044, in U. S. National Museum; original collected by H. H. Dean.

POLISHED STONE HATCHET.—Olive green, variegated stone.

Valley of the Cumberland River, Tennessee.

Cast, No. 11484, in U. S. National Museum; original collected by Dr. Joseph Jones.

POLISHED STONE HATCHET.—Quartzite.

Mound in Stoddard County, Mo.

Original, No. 99341, in U. S. National Museum; collected by T. L. Whitehead.

COPPER IMPLEMENTS AND ORNAMENTS.

The North American Indians, although living in the age of Polished Stone, made use of native copper. It was chiefly obtained from the Lake Superior region. Aboriginal mining has been described by Mr. Charles Whittlesey in Smithsonian Contributions, Vol. XIII. Native copper has been found in New England, New Jersey, and the mountains of Virginia and the Carolinas. It is generally believed that the Indians did not smelt or cast copper, but hammered their implements out of nuggets; yet it is possible that some races or tribes had the knowledge of casting. The implements of copper were principally hatchets, knives, and spearheads, but there are elaborate ornaments. (Handbook, pp. 666-667, fig. 40.)

COPPER HATCHET.

From a mound, Union Hills, Laporte County, Ind.

Cast, No. 30820, in U. S. National Museum; original collected by R. S. Robertson.

COPPER HATCHET.

Chattanooga, Tenn.

Cast, No. 30256, in U. S. National Museum; original collected by Gen. J. T. Wilder.

GOUGES.

These are similar to the polished stone hatchets in material, mode of manufacture, and in every way except their gouge form. They were probably handled and used in the same manner. They are more plentiful in, if not confined to, the Atlantic States. Those of the southern coast and the West Indies are of shell. They occur in Europe, especially in Scandinavia. (Handbook, p. 646, fig. 21.)

GOUGE.

Salisbury, Mass.

Cast, No. 13165, in U. S. National Museum; original collected by H. G. Leslie.

GOUGE.—Black slate.

Onondaga County, N. Y.

Cast, No. 32286, in U. S. National Museum; original collected by Otis M. Bigelow.

GOUGE.—Trap rock.

Onondaga County, N. Y.

Cast, No. 32304, in U. S. National Museum; original collected by Otis M. Bigelow.

GOUGE.—Porphyritic greenstone.

Harpswell, Me.

Original, No. 12294, in U. S. National Museum; collected by Dr. E. Palmer.

GOUGE.—Sandstone.

Middleboro, Mass.

Original, No. 6495, in U. S. National Museum; collected by J. W. P. Jenks.

GOUGE.—Syenite.

Fremont, Ohio.

Cast, No. 35622, in U. S. National Museum; original collected by Lewis Leppelman.

GOUGE.—Sandstone.

Cayuga County, N Y.

Cast, No. 32287, in U. S. National Museum; original collected by Otis M. Bigelow.

ADZES.

These are, apparently, only a variation in form and use from the polished stone hatchet and gouge. They are more rare. Their distribution in the United States seems to be limited to the northeast Atlantic and the northwest Pacific coasts, but they have been found in other parts of the prehistoric world. Their mode of hafting is shown in fig. 21, Nos. 70 and 71. (Handbook, p. 646.)

ADZE.

British Columbia.

Original, No. 9791, in U. S. National Museum; collected by Lieut. F. W. Ring, U. S. A.

ADZE.

Lyme, Conn.

Cast, No. 21892, in U. S. National Museum; original collected by L. G. Olmstead.

ADZE.

Middletown, Conn.

Original, No. 34275, in U. S. National Museum; collected by A. R. Crittenden.

ADZE.

Hobart, Ind.

Cast, No. 45743, in U. S. National Museum; original collected by W. W. Cheshire.

ADZE.—Granite. This implement, from its form, might pass for an adze, but other uses might be indicated; they may have been bark peelers.

Casey County, Ky.

Original, No. 97322, in U. S. National Museum; collected by A. Fairhurst.

POLISHED SPEARHEADS OR KNIVES.

These are mostly made of slate, and occur oftenest in the northern regions of America (Alaska, etc.), but quite a number have been found in Maine and New York.

POLISHED SPEARHEAD OR KNIFE.—Black slate.

Onondaga County, N. Y.

Cast, No. 32295, in U. S. National Museum; collected by Otis M. Bigelow.

POLISHED SPEARHEAD OR KNIFE.—Black slate.

Union Springs, N. Y.

Cast, No. 32639, in U. S. National Museum original; collected by Otis M. Bigelow.

PERFORATORS.

This name has been given to a class of chipped objects which indicate by their form a possibility of being used as such. There is hardly enough evidence, however, in their appearance to warrant this conclusion. Many of the points are slightly broken, and in a few instances the edges are smoothed; but nearly all are in their original condition and show no signs of use. A member of the Sioux Indian delegation at Washington, in January, 1890, pronounced many of them to be ornaments worn suspended from the neck. A Mohawk Indian declared them to be amulets or charms. (Handbook, p. 643, fig. 18.)

PERFORATOR.—Hornstone.

Valley of the Ohio River.

Original, No. 35303, in U. S. National Museum; collected by W. W. Bowers.

DIGGING IMPLEMENTS.

Large, flat objects, usually of siliceous material, chipped into an oval or ovoid outline, sharp around the edge; some tapering, some truncated and notched. These are peculiar to the eastern half of the United States. One has lately been deposited in the Peabody Museum. It was found in Maine, and is the largest known, being 18 inches long, 6 inches wide, and 1¼ inches thick. They are more frequent in the region of the Mississippi, Ohio, and Tennessee valleys. Many show evidences of wear, but some show a polish not yet accounted for. (Handbook, p. 644, fig. 19.)

Class I. Oval without notches.

Class II. Ovoid, truncated, notched, etc.

DIGGING IMPLEMENT, CLASS I.—Novaculite.

St. Clair County, Ill.

Cast, No. 30230, in U. S. National Museum; original collected by Dr. J. J. R. Patrick.

DIGGING IMPLEMENT, CLASS I.—Flint.

From an ancient cemetery, White Creek road, 9 miles from Nashville, Tenn.

Cast, No. 11487, in U. S. National Museum; original collected by Dr. Joseph Jones.

DIGGING IMPLEMENT, CLASS I.—White hornstone.

St. Clair County, Ill.

Cast, No. 30153, in U. S. National Museum; original collected by Dr. J. J. R. Patrick.

DIGGING IMPLEMENT, CLASS II.—Bluish-gray flint.

East St. Louis, Ill.

Cast, No. 30228, in U. S. National Museum; original collected by Dr. J. J. R. Patrick.

DIGGING IMPLEMENT, CLASS II.—Gray flint.

Madison County, Ill.

Cast, No. 10049, in U. S. National Museum; original in collection of William S. Vaux.

DIGGING IMPLEMENT, CLASS II.—Bluish-gray flint.

East St. Louis, Ill.

Cast, No. 30229, in U. S. National Museum; original collected by Dr. J. J. R. Patrick.

SCRAPERS.

Thick flakes of flint, obsidian, etc., worked at one extremity to a convex edge. They were inserted in a handle and used for scraping any needed substance, but principally for dressing skins. Occasional specimens are found with a stem and barb, resembling in that regard certain arrow and spear heads, from a broken one of which it is supposed they have been made, thus serving a secondary purpose. Another class are the disks of quartz which are mostly found on the Atlantic Coast from Maine to North Carolina. (Handbook, p. 643, fig. 17.)

DISK-SCRAPER.—Quartz.

Sag Harbor, N. Y.

Original, No. 59109, in U. S. National Museum; collected by W. W. Tooker.

STONE DAGGERS.

These are different from and not to be confounded with the leaf-shaped implements which may have had wooden handles and have been used indifferently as knives or spearheads. (Handbook, p. 640, pl. CVI.) They are rare in the United States. They resemble the same weapon from Scandinavia, and are, like them, always chipped and rarely or never polished. The handles have been worked out of the solid. (Handbook, p. 639, fig. 13.)

STONE DAGGER.—Chert.

Pearl Depot, Pike County, Ill.

Original, No. 32831, in U. S. National Museum; collected by Brainard Mitchell.

STONE DAGGER.—Brown, jaspery flint.

Warren County, Ky.

Cast, No. 61858, in U. S. National Museum; original collected by Dr. John E. Younglove.

STONE DAGGER.—Gray flint.

Found in a mound near Carthage, Hale County, Ala.

Original, No. 9330, in U. S. National Museum; collected by Prof. N. T. Lupton.

STONE DAGGER.—Hornstone.

Found in a mound near Nashville, Tenn.

Original, No. 32059, in U. S. National Museum; collected by Maj. J. W. Powell.

STONE SWORDS?

These are similar to the daggers, yet without indication of handles. They were chipped and not polished. The handle was doubtless wrapped with skin, cloth, grass, or the like. (Handbook, p. 639, pl. CVI, fig. 78.)

STONE SWORD.—Dark-brown flint.

Ancient earthwork on the Big Harpeth River, near Franklin, Tenn.

Cast, No. 11481, in U. S. National Museum; original collected by Dr. Joseph Jones.

STONE SWORD.—Obsidian.

From a mound, Oregon.

Cast, No. 30190, in U. S. National Museum; original collected by Capt. A. W. Chase.

MORTARS AND PESTLES.

These implements were in common use by the aborigines throughout the United States. Nearly every material was utilized for mortars, but stone was usual. One has been found in California made of a fossil whale vertebra. Those of wood are not infrequent. The metate of Mexico is similar in purpose. These objects are important in this, that while they have continued in use within the knowledge of persons still living, they have been found in the auriferous gravels of California at such depth and with such associations as to be assigned to the Quaternary, or even Tertiary, geologic period. If this be true, they are the earliest known smoothed stone implements made or used by man. Mortars are not exhibited in this collection. (Handbook, pp. 659–660, figs. 32, 33.)

PESTLE.—Sandstone.

Santa Barbara County, Cal.

Cast, No. 30545, in U. S. National Museum; original collected by Stephen Bowers.

PESTLE.

South Westport, Mass.

Cast, No. 35284, in U. S. National Museum; original collected by Mrs. R. L. Smith.

DRILLED TABLETS.

These objects, which form a numerous class, are of various shapes and careful finish, pierced with one, two, or more holes. They are usually made of slate, but other material was used. Different purposes have been ascribed to them, but nothing certain is known. They may have been pendants, amulets, or badges of distinction. They are never brought to a cutting edge, and, except in rare cases, show no signs of use. They have been found on the breasts of skeletons of antiquity in the United States. (Handbook, p. 650, fig. 24.)

DRILLED TABLET.—Porphyritic syenite.

White County, Ill.

Cast, No. 42915, in U. S. National Museum; original collected by W. M. Locke.

DRILLED TABLET.—Clay ironstone.

Morehouse County, La.

Original, No. 29173, in U. S. National Museum; collected by Benj. H. Brodnax.

DRILLED TABLET.—Slate.

Western Reserve, Ohio.

Original, No. 6863, in U. S. National Museum; collected by J. H. Devereux.

DRILLED TABLET.—Striped slate.

Portage County, Ohio.

Cast, No. 42914, in U. S. National Museum; original collected by Dr. S. M. Luther.

DRILLED TABLET.—Striped slate.

Western Reserve, Ohio.

Original, No. 6850, in U. S. National Museum; collected by J. H. Devereux.

INSCRIBED TABLETS.

These are extremely rare and are principally found in mounds. Their inscriptions have never been read, and the pretended translations are not approved by students of prehistoric archæology. A number of tablets have been reported of which some are without doubt genuine, but the majority are believed, or are contended to be, frauds. The presumption would be against any newly found tablet, and its genuineness must be established. The best known tablets believed or accepted as genuine are the Cincinnati Tablet (S. I. Contributions to Knowledge, Vol. I, p. 274 et seq.); Davenport Tablet, Short ("North American Indians of Antiquity," p. 38, et seq.); Grave Creek Tablet, McLean ("The Mound Builders," p. 91, et seq.).

INSCRIBED TABLET.—Fine-grained sandstone of a light-brown color.

From a mound, Cincinnati, Ohio.

Cast, No. 7250, in U. S. National Museum; original in the possession of Robert Clark, Cincinnati, Ohio.

SINKERS, PENDANTS, OR CHARMS.

This series shows various, though not all, kinds of the objects. These are made of hematite or hard stone, and are finely polished. Some sinkers not shown are smooth, flat, shore pebbles, broken on the edge so as to easily take and hold the line. One has a hole in the top by which a line can be attached; others have a groove, though very slight; while some have neither groove nor hole. Objects similar to these have been found with a truncated butt. Their distribution throughout the interior in greater numbers than on the lake or sea shores adds to the difficulty of their classification and a knowledge of their purpose. (Handbook, p. 653, fig. 26.)

SINKER, PENDANT, OR CHARM.

Eastport, Me.

Original, No. 11624, in U. S. National Museum; collected by Rev. Eugene Vetromile.

SINKER, PENDANT, OR CHARM.

From a mound, Manatee County, Fla.

Original, No. 30119, in U. S. National Museum; collected by John P. Wall.

SINKER, PENDANT, OR CHARM.—Hematite.

Hancock County, Ill.

Original, No. 59580, in U. S. National Museum; collected by M. Tandy.

SINKER, PENDANT, OR CHARM.—Hematite.

Morehouse County, La.

Original, No. 29178, in U. S. National Museum; collected by Benj. H. Brodnax.

SINKER, PENDANT, OR CHARM.—Hematite.

Plantersville, La.

Original, No. 34408, in U. S. National Museum; collected by Benj. H. Brodnax.

SPADE-SHAPED IMPLEMENTS.

These might be classed with the ceremonial objects, as no practical use has been suggested for them. Their rarity and restricted locality would seem to indicate a purpose more ceremonial than otherwise. Less than a dozen are represented in the collection of the U. S. National Museum, the majority coming from Tennessee; northern Georgia and northeastern Arkansas furnishing one specimen each. They are always polished, and the spade portion is never brought to a sharp cutting edge. The material of which they are made is always compact, fine-grained stone, greenstone, chlorite, lydite, etc. (Handbook, p. 657, fig. 26.)

SPADE-SHAPED IMPLEMENT.—Green chlorite.

From a mound (without skeleton), Hill Bayou, near Des Arc, Prairie County, Ark.

Original, No. 88130, in U. S. National Museum; collected by Dr. E. Palmer.

CEREMONIAL OBJECTS.

The purpose of these objects is purely conjectural. For want of a name indicating their use they have been called variously, ceremonial objects, banner stones, butterflies, etc. Their material is usually too soft and fragile to have served as cutting implements or weapons. They are not sharpened to a cutting edge, and their signs of use are rare, except that they are often broken. The hole is too small for the insertion of a handle for service. While some specimens are of slate and other soft substances, indicating that they might have been ornaments, yet others are of quartz, jasper, syenite, and similar substances—hard, and difficult to shape, polish, or drill. Some specimens show only the rude form made by hammering and pecking; others, although finished by polishing, are destitute of shaft holes, or merely show their beginnings, demonstrating the fact that in America (as in Europe) articles were first brought to the required shape and afterwards drilled. A large number of these objects are found broken after being completely finished, both by polishing and drilling, and in some cases the blades or wings show perforations similar to those in the tablets. This indicates a secondary use, possibly as badges or ornaments, and so they were considered of value, even when broken. (Handbook, p. 648, fig. 23.)

CEREMONIAL OBJECT.

Howard County, Md.

Cast, No. 32086, in U. S. National Museum; original collected by J. D. McGuire, esq.

CEREMONIAL OBJECT.—Striped slate.

Sandusky County, Ohio.

Cast, No. 35627, in U. S. National Museum; original collected by Lewis Leppelman.

CEREMONIAL OBJECT.—Mottled syenite.

Prince George County, Md.

Original, No. 34648, in U. S. National Museum; collected by Dr. E. R. Reynolds.

CEREMONIAL OBJECT.—Argillite.

Fremont, Ohio.

Cast, No. 35625, in U. S. National Museum; original collected by Lewis Leppelman.

CEREMONIAL OBJECT.—Striped slate.

Fremont, Ohio.

Cast, No. 35608, in U. S. National Museum; original collected by Lewis Leppelman.

CEREMONIAL OBJECT.—Ferruginous quartz.

Wayne County, Ohio.

Cast, No. 32382, in U. S. National Museum; original collected by R. M. Norris.

CEREMONIAL OBJECT.—Ferruginous quartz.

From a mound, Connersville, Ind.

Cast, No. 31675, in U. S. National Museum; original collected by Prof. Van Benschoten.

CEREMONIAL OBJECT.—Striped slate.

Cumberland County, Pa.

Cast, No. 31674, in U. S. National Museum; original collected by John G. Comfort.

CEREMONIAL OBJECT.—Striped slate.

Fremont, Ohio.

Cast, No. 35611, in U. S. National Museum; original collected by Lewis Leppelman.

BIRD-SHAPED OBJECTS.

This name is given to a class of objects somewhat bird-like in shape, but which run imperceptibly into other conventional forms, such as the fence lizard, turtle, etc. They generally stand on flat bases, pierced with a diagonal hole at each end where the breast and tail rise. In some cases the eyes are not represented; in others they are marked by bead-like projections expanding into discs. Some specimens belonging to this class were evidently not intended to represent either birds or animals, both ends being alike. Various theories as to their use have been

advanced, knife handles, corn huskers, etc., but none of these are satisfactory. One specimen in the National Museum (No. 9075) from the Northwest coast (entirely modern) has a cord attached, evidently for suspension. Their use as charms or amulets seems the most probable. A Chippewa Indian stated that they served for gaming. They were placed in a flat pan or basket which, being covered, was shaken up and down, then set down carefully, the cover removed, and an inspection would show how many birds were seated upright. He who had the greatest number won the game. (Handbook, p. 651, fig. 25, Nos. 210, 211.)

BIRD-SHAPED OBJECT.—Striped slate.

Fremont, Ohio.

Cast, No. 35610, in U. S. National Museum; original collected by Lewis Leppelman.

BIRD-SHAPED OBJECT.

Sacketts Harbor, N. Y.

Original, No. 97128, in U. S. National Museum; received from the Army Medical Museum.

BOAT-SHAPED OBJECTS.

The title indicates our want of knowledge concerning their purpose. Different uses have been assigned to them, such as twine twisters, handles for carrying parcels, or for tightening cords or lines. A Mohawk medicine woman said they were "a witch's amulets for her transportation over the water, as is the broomstick by the modern witch for flight through the air. If it was lost, her power of flight or passage was gone." Some are solid, others are hollowed out, and the perforations may be either at the center or near the ends. These objects are nearly always well made and polished; their material is syenite, though greenstone and occasionally slate were used, especially the striped variety. A limited number of specimens of this class, made of galena, have been found. (Handbook, p. 650, fig. 24, Nos. 134–135.)

BOAT-SHAPED OBJECT.

Southington, Conn.

Cast, No. 34597, in U. S. National Museum; original collected by Larner Andrews.

BOAT-SHAPED OBJECT.—Striped slate.

From a mound in Perry County, Ohio.

Original, No. 13702, in U. S. National Museum; collected by William Anderson.

BOAT-SHAPED OBJECT.—Syenite.

Pearl Depot, Pike County, Ill.

Original, No. 32833, in U. S. National Museum; collected by Brainard Mitchell.

TUBES.

In the National Museum is a number of stone tubes of cylindrical and other forms and different lengths. The smaller ones, often only a few inches in length, have been thought to be ornaments. A variety of uses is ascribed to the larger objects, the most plausible being that by the medicine man for the pretended curing of diseases. Their use for smoking or as whistles or calls has also been suggested. The hole through the tube is sometimes the same size throughout, having been drilled from one end, and sometimes biconical, having been drilled from both ends. Another class has large, straight, cylindrical holes drilled almost the entire length of the tube and then finished with one of a small diameter. One specimen in the Museum collection is 13 inches long and terminates at one end in an expanding mouthpiece (No. 7243). The materials are usually steatite, banded slate, and chlorite, although specimens of sandstone are not wanting. (Handbook, p. 664, fig. 37)

TUBE.—Striped slate.

Fremont, Ohio.

Cast, No. 35632, in U. S. National Museum; original collected by Lewis Leppelman.

TUBE.—Greenish banded slate.

From a mound, Chillicothe, Ohio.

Cast, No. 7243, in U. S. National Museum; original collected by Dr. E. H. Davis.

TUBE.—Gray steatite.

From a mound in Rockingham County, Va.

Original, No. 42674, in U. S. National Museum; collected by Dr. Solon P. Henkle.

PIPES.

No class of aboriginal prehistoric art productions exhibits a greater variety of forms than pipes. They are chiefly carved from stone, but not unfrequently were molded in clay. A classification of pipes is impossible on account of their diversity of shape. For illustration and description of the more marked types see Handbook, p. 662 et seq., figs. 35, 36, 38.

PIPE.—Dark chlorite.

From a mound, Lebanon, Ky.

Original, No. 30177, in U. S. National Museum; collected by W. T. Knott.

PIPE.—Catlinite.

Hart County, Ky.

Cast, No. 30085, in U. S. National Museum; original collected by Prof. J. R. Proctor.

PIPE.—Black chlorite.

Clinch River, East Tennessee.

Cast No. 35383, in U. S. National Museum; original collected by W. M. H. Taylor.

PIPE.—Slate.

Onondaga County, N. Y.

Original, No. 16567, in U. S. National Museum; collected by F. H. Cushing.

PIPE.—Black chlorite.

Fremont, Ohio.

Cast, No. 35620, in U. S. National Museum; original collected by Lewis Leppelman.

DISCOIDAL STONES.

The specimens here enumerated are not less than 2 inches, and seldom over 6 inches, in diameter, and show unmistakable indications of having been artificially worked into shape by pecking or grinding. The material is usually hard, such as quartz, white, brown, or yellow quartzite (sometimes translucent), dark greenstone, etc. Specimens of argillite and sandstone, however, are not wanting. They are supposed to have been used by the Indians in a game called "chungkee," described by Adair, DuPratz, Lawson, and other early writers, and referred to by Lewis and Clarke, Catlin, and writers of more recent date. They are found principally in the Southern and Western States. (Handbook, p. 654, fig. 27.)

DISCOIDAL STONE.—Brown jaspery quartz.

East Tennessee.

Cast, No. 35450, in U. S. National Museum; original collected by Rev. C. Foster Williams.

DISCOIDAL STONE.—Reddish syenite.

Virginia.

Original, No. 30234, in U. S. National Museum; collected by F. H. Cushing.

STONE OBJECTS FROM THE AURIFEROUS GRAVELS OF CALIFORNIA.

These are the enigmas of prehistoric man in North America. If any reliance can be placed in human testimony, we must believe that these, with mortars and similar objects, came from under the lava beds and belong to the early Quaternary, if not the Tertiary geologic period. If thus found they would seem to be the earliest known implements made by man, and again they are of the Neolithic or Polished Stone civilization, and so belong to the more modern prehistoric man in the present geologic period. These contradictions must await the investigations of the geologist and paleontologist as well as the archæologist. In our present knowledge it would be unwise to announce any hard and fast theory.

OBJECT FROM THE AURIFEROUS GRAVELS OF CALIFORNIA.—Fragment of a pestle.

Tuolumne County, Cal.

Cast, No. 8742, in U. S. National Museum; original collected by Dr. L. G. Yates.

OBJECT FROM THE AURIFEROUS GRAVELS OF CALIFORNIA.—Fragment of a steatite ladle.

Tuolumne County, Cal.

Cast, No. 8736, in U. S. National Museum; original collected by Dr. L. G. Yates.

PATU-PATU OR MERAI.

This is the traditional weapon of the New Zealander. They may be made of wood, but usually are of hard greenstone, the jade of that country. They have been polished with a species of corundum found in the island. They are finely and symmetrically made, must have required much labor, and are valued highly. They become heirlooms and are given proper names. A sword knot is attached either by a groove or hole. This specimen was given by J. B. Aldrich, who describes it by letter from Memphis, June 25, 1883, thus: "It was dug out of a mound under my direction in 1866, while quartermaster, United States Army. The mound was situated just south of the Arkansas River, near the thirty-eighth parallel, in Bent County, southeastern Colorado. It was the theory of Kit Carson, who accompanied the command, that it had been secreted there by some of the Comanche or Apache Indians who then occupied the Territory." The hole is filled with a remnant of the loop, made of vegetable fiber.

PATU-PATU OR MERAI.

Said to have been found in a mound, Bent County, Colo.; believed to have come from New Zealand, Pacific Ocean.

Original, No. 61959, in U. S. National Museum; collected by J. B. Aldrich.

PERFORATED STONE CLUB HEADS.

The objects forming this series in the Museum collection have been mostly obtained from Indian graves and from the surface of the Santa Barbara Islands and the opposite Californian coast. Their material is sandstone, serpentine, soapstone, etc., though specimens of harder material, such as greenstone, have been found. They vary in size and form, being from 1½ to 5 inches or more in diameter. There are some specimens only one-half inch in thickness, while others are so thick as to equal their diameter and give them a globular form. (Handbook, p. 655, fig. 28.)

PERFORATED STONE CLUB HEAD.

Santa Cruz Island, California.

Original, No. 18227, in U. S. National Museum; collected by Paul Schumacher.

List of Duplicate Rocks and Ores Distributed by the Smithsonian Institution on behalf of the National Museum.

[Prepared under the direction of Dr. George P. Merrill, Curator, Department of Geology.]

1. Gold ore. Auriferous sulphurets.
   Gilpin County, Colo.
2. Gold ore. Auriferous sulpharsenides in quartz.
   Kern County, Cal.
3. Gold ore. Auriferous sulphurets in quartz.
   Mariposa County, Cal.
4. Gold-silver ore. Quartz with auriferous and argentiferous sulphurets.
   Comstock Lode, Storey County, Nev.
5. Gold-silver ore. Siliceous rock with auriferous and argentiferous sulphurets,
   French District, Owyhee County, Idaho.
6. Silver ore. Ruby silver and stephanite in quartz.
   Reese River District, Lander County, Nev.
7. Silver ore. Granitic rock carrying silver chloride.
   Colorado.
8. Silver ore. Hard carbonate ore.
   Leadville, Lake County, Colo.
9. Silver-lead ore. Argentiferous galena.
   Utah.
10. Silver-lead ore. Argentiferous galena.
    Hidden Treasure Mine, Utah.
11. Silver-lead ore. Argentiferous galena.
    Montana.
12. Silver-copper ore. Argentiferous chalcopyrite.
    Pocahontas Mine, Fremont County, Colo.
13. Lead-zinc ore. Galena and sphalerite.
    Portugal.
14. Lead-zinc ore. Galena, blende, and mispickel in quartz.
    Donna Ana County, N. Mex.
15. Lead-zinc-copper ore. Galena, sphalerite, and chalcopyrite.
    Donna Ana County, N. Mex.
16. Zinc ore. Calamine.
    Friedensville, Pa.
17. Zinc ore. Sphalerite.
    Friedensville, Pa.
18. Zinc ore. Smithsonite.
    Austria (?).
19. Zinc ore. Willemite, zincite, and franklinite.
    Franklin Furnace, Sussex County, N. J.
20. Copper ore. Chalcopyrite.
    Queensland, Australia.
21. Copper ore. Chalcopyrite.
    Donna Ana County, N. Mex.
22. Copper ore. Chalcopyrite.
    Ely, Orange County, Vt.
23. Copper ore. Native copper in feldsitic conglomerate.
    Calumet and Hecla Mine, Lake Superior, Michigan.
24. Copper ore. Native copper in melaphyre.
    Lake Superior, Michigan.
25. Nickel ore. Nickeliferous pyrrhotite.
    Gap Mine, Lancaster County, Pa.
26. Nickel-copper ore. Nickeliferous pyrrhotite and chalcopyrite.
    Modum, Norway.
27. Nickel ore. Oxidized ore. (Erythrite, anabergite, etc.)
    Lovelocks, Churchill County, Nev.
28. Silver-lead ore. Cerussite.
    Utah and Nevada.
29. Tin ore. Cassiterite with wolfram and pyrolusite.
    Temescal, San Bernardino County, Cal.
30. Pyrite. For making sulphuric acid.
    Rio Tinto, Portugal.
31. Pyrite. For making sulphuric acid.
    Louisa County, Va.
32. Pyrite and chalcopyrite. For making sulphuric acid.
    Louisa County, Va.
33. Iron ore. Red hematite.
    Giles County, Va.
34. Iron ore. Magnetite.
    Essex County, N. Y.
35. Iron ore. Magnetite.
    Sweden.
36. Iron ore. Hematite, specular iron ore.
    Marquette County, Mich.

37. Iron ore. Siderite.
Germany.
38. Iron ore. Limonite.
Germany.
39. Iron ore. Limonite.
Lawrence County, Ind.
40. Iron ore. Hematite. Called fossil ore.
Tennessee.
41. Manganese ore. Impure wad.
Tennessee.
42. Manganese ore.
Tennessee.
43. Ferro-manganese.
Italy.
44. Ferro-manganese.
Austria.
45. Native sulphur.
Rabbit Hole Mine, Humboldt County, Nev.
46. Mercury ore. Cinnabar.
California.
47. Chromite. Chrome iron ore.
Shasta County, Cal.
48. Anthracite coal. Graphitic.
Newport, R. I.
49. Anthracite coal.
Schuylkill County, Pa.
50. Bituminous coal,
West Virginia.
51. Cannel coal.
Kentucky.
52. Graphite.
Buckingham, Quebec, Canada.
53. Emery rock.
Chester, Hampden County, Mass.
54. Phosphatic sandstone.
South Carolina.
55. Massive apatite.
Canada.
56. Massive apatite.
Norway.
57. Rock salt.
Petite Anse, La.
58. Kaolin.
Lawrence County, Ind.
59. Biotite granite.
Woodstock, Md.
60. Biotite granite.
Red Beach, near Calais, Me.
61. Biotite granite.
62. Biotite muscovite granite.
West Concord, N. H.
63. Orbicular granite.
Craftsbury, Vt.
64. Hornblende syenite (drift).
Cape Elizabeth, Me.
65. Elæolite syenite.
Litchfield, Me.
66. Elæolite syenite.
Libertyville, N. J.
67. Diabase.
York, Pa.
68. Diabase.
69. Olivine diabase.
Mine Lamotte, Mo.
70. Gabbro.
71. Diorite.
72. Norite.
Keeseville, N. Y.
73. Kersantite.
Franklin Furnace, Sussex County, N. J.
74. Camptonite.
Lewiston, Me.
75. Quartz porphyry.
Ironton, Mo.
76. Liparite (rhyolite).
Yellowstone National Park.
77. Liparite (rhyolite).
Zacatecas, Mexico.
78. Liparite (obsidian).
Yellowstone National Park.
79. Liparite (obsidian).
Mono Craters, Cal.
80. Trachyte.
Silver Cliff, Colo.
81. Phonolite.
Black Hills, Dak.
82. Hornblende andesite.
Yellowstone National Park.
83. Hornblende andesite.
Madison County, Mont.
84. Basalt.
Yellowstone National Park.
85. Basalt.
86. Melaphyre.
Brighton, Mass.
87. Peridotite (picrite).
Little Deer Isle, Me.
88. Peridotite (hornblende picrite).
Stonypoint, N. Y.
89. Peridotite (dunite).
Cullasaja, N. C.
90. Pyroxinite.
Webster, N. C.
91. Theralite.
Crazy Mountain, Mont.
92. Impure serpentine.
Chester County, Pa.

93. Serpentine.
Deer Isle, Me.
94. Serpentine.
Montville, N. J.
95. Serpentine.
Easton, Pa.
96. Serpentine (variety williamsite).
Fulton, Lancaster County, Pa.
97. Glaucophane rock.
Sonoma County, Cal.
98. Gneiss with cordierite.
Guilford County, Conn.
99. Gneiss.
Montgomery County, Md.
100. Amphibolite.
Hanover, N. H.
101. Mica schist.
West Washington, D. C.
102. Quartzite.
Potsdam, N. Y.
103. Steatite (soapstone).
Grafton, Vt.
104. Crystalline limestone (marble).
West Rutland, Vt.
105. Crystalline dolomite (marble).
Westchester, N. Y.
106. Crystalline dolomite (marble).
Lee, Mass.
107. Ophiolite.
Essex County, N. Y.
108. Limestone (fossiliferous).
Rochester, N. Y.
109. Limestone (oolitic).
Indiana.
110. Limestone (oolitic).
Kentucky.
111. Limestone (coral).
Bermuda.
112. Slate.
Buckingham, Quebec, Canada.
113. Gypsum.
Saltville, Va.
114. Calc sinter.
Yellowstone National Park.
115. Siliceous oolite.
Center County, Pa.
116. Chert.
Licking County, Ohio.
117. Sandstone (Triassic).
Seneca Creek, Md.
118. Sandstone (Subcarboniferous).
Berea, Ohio.
119. Calcareous conglomerate.
Loudoun County, Va.
120. Rhyolite tuff.
Douglas County, Colo.
121. Rhyolite tuff.
Zacatecas, Mexico.
122. Infusorial earth.
Popes Creek, Md.
123. Infusorial earth.
Nevada.
124. Oolitic sand.
Salt Lake, Utah.
125. Shell sand.
Hawaiian Islands.
126. Lapilli.
Mono Craters, Cal.

List of Duplicate Marine Invertebrates Distributed by the Smithsonian Institution on Behalf of the National Museum.

Series V.

[Prepared under the direction of Mr. James E. Benedict, Assistant Curator, Department of Marine Invertebrates.]

CRUSTACEA.

Brachyura.

1. Oregonia gracilis, Dana.
Bering Sea to Oregon; 5 to 135 fathoms.
2. Euprognatha rastellifera, Stimpson.
Off Marthas Vineyard; 70 fathoms.
3. Pugettia gracilis, Dana.
West coast North America; shallow water.
4. Epialtus productus, Randall.
West coast United States; shallow water.

CRUSTACEA—continued.

Brachyura—Continued.

5. Chionœcetes opilio, Kröyer.
North Pacific, North Atlantic; 10 to 120 fathoms.
6. Chionœcetes Tanneri, Rathbun.
North Pacific; 300 to 1,600 fathoms.
7. Hyas araneus, Leach.
North Atlantic; 35 to 90 fathoms.
8. Hyas coarctatus, Leach.
North Atlantic; 20 to 65 fathoms.
9. Hyas coarctatus, Leach.
North Pacific; 10 to 50 fathoms.

CRUSTACEA—continued.

Brachyura—Continued.

10. Hyas lyratus, Dana.
    Bering Sea to Puget Sound, 5 to 110 fathoms.
11. Hyastenus longipes (Dana).
    North Pacific, 30 to 600 fathoms.
12. Libinia dubia, M. Edw.
    Woods Holl, Mass.; shallow water.
13. Libinia emarginata, Leach.
    New England; shallow water.
14. Microphrys bicornutus (Latreille).
    Florida and West Indies; shallow water.
15. Othonia aculeata (Gibbes).
    Key West, Fla.; shallow water.
16. Othonia Lherminieri, Schramm.
    Florida; shallow water.
17. Mithrax cinctimanus (Stimpson).
    Key West, Fla.; shallow water.
18. Mithrax hispidus (Herbst).
    St. Thomas, W. I.; shallow water.
19. Mithrax sculptus (Lamarck).
    Florida and West Indies; shallow water.
20. Cancer borealis, Stimpson.
    Northeast coast United States; shallow water.
21. Cancer gracilis, Dana.
    California; shallow water.
22. Cancer irroratus, Say.
    East coast North America; low tide to 50 fathoms.
23. Cancer magister, Dana.
    West coast North America; below low tide.
24. Cancer productus, Randall.
    West coast North America; shallow water along shore.
25. Menippe mercenaria (Say).
    West coast of Florida; shallow water.
26. Panopeus angustifrons, Benedict and Rathbun.
    East coast United States; shallow water.
27. Panopeus depressus, Smith.
    Florida; shallow water.
28. Panopeus Herbstii, M. Edw.
    East coast United States; shallow water.
29. Panopeus occidentalis, Saussure.
    Florida and West Indies; shallow water.

CRUSTACEA—continued.

Brachyura—Continued.

30. Panopeus Packardii, Kingsley.
    Florida; shallow water.
31. Panopeus Sayi, Smith.
    Massachusetts to South Carolina; shallow water.
32. Panopeus texanus, Stimpson.
    Florida; shallow water.
33. Eriphia gonagra (Fabr.).
    Florida; shallow water.
34. Pseudothelphusa Jouyi, Rathbun.
    Lake Chapala, Mexico.
35. Trichocarcinus oregonensis (Dana).
    West coast North America; shallow water.
36. Telmessus cheiragonus (Tileseus).
    Alaska and Puget Sound; shallow water.
37. Callinectes hastatus (Say).
    East coast United States; shallow water.
38. Callinectes larvatus, Ordway.
    Southern coast United States; shallow water.
39. Callinectes ornatus, Ordway.
    Southern coast United States; shallow water.
40. Neptunus Sayi, Stimpson.
    North Atlantic; surface.
41. Platyonichus ocellatus, Latreille.
    New England; shallow water.
42. Carcinus mænas, Leach.
    New England; shallow water.
43. Geryon quinquedens, Smith.
    Off Marthas Vineyard; 400 to 1,000 fathoms.
44. Gelasimus pugilator (Bosc).
    Massachusetts to Florida; shore.
45. Gelasimus pugnax, Smith.
    Southern New England; shore.
46. Ocypoda arenaria (Catesby).
    West Indies; shore.
47. Nautilograpsus minutus (Linné).
    North Atlantic; surface.
48. Grapsus maculatus (Catesby).
    Tropical America; shore.
49. Pachygrapsus crassipes, Randall.
    West coast United States; shore.
50. Brachynotus (Heterograpsus) nudus (Stimpson).
    West coast North America; shore.
51. Sesarma cinerea (Bosc).
    Southern coast United States; shore.

CRUSTACEA—continued.

Brachyura—Continued.

52. Calappa marmorata, Fabricius.
Southern coast United States; shallow water.

Anomura.

53. Munida caribæa? Smith.
Off Marthas Vineyard; 50 to 150 fathoms.
54. Hippa talpoida, Say.
Massachusetts to Florida; sandy shores.
55. Eupagurus alaskensis, Benedict.
Alaska; 5 to 45 fathoms.
56. Eupagurus aleuticus, Benedict.
Aleutian Islands; 10 to 250 fathoms.
57. Eupagurus Bernhardus, Brandt.
Off New England coast; 5 to 250 fathoms.
58. Eupagurus Brandti, Benedict.
Aleutian Islands; 15 to 85 fathoms.
59. Eupagurus capillatus, Benedict.
Alaska; 15 to 250 fathoms.
60. Eupagurus confragosus, Benedict.
Alaska; 40 to 240 fathoms
61. Eupagurus Dalli, Benedict.
Aleutian Islands; 15 to 85 fathoms.
62. Eupagurus hirsutiusculus (Dana).
Alaska and Bering Island; shallow water.
63. Eupagurus Kröyeri, Stimpson.
East coast United States; 50 to 150 fathoms.
64. Eupagurus longicarpus, Stimpson.
New England; shallow water, along shore.
65. Eupagurus munitus, Benedict.
Alaska; 20 to 80 fathoms.
66. Eupagurus politus, Smith.
Off Marthas Vineyard; 10 to 600 fathoms.
67. Eupagurus pollicaris, Stimpson.
Southern coast New England; 1 to 25 fathoms.
68. Eupagurus pubescens, Brandt.
Off New England coast· 10 to 150 fathoms.
69. Eupagurus Rathbuni, Benedict.
Alaska; 30 to 70 fathoms.
70. Eupagurus splendescens (Owen).
North Pacific; 15 to 225 fathoms.

CRUSTACEA—continued.

Anomura—Continued.

71. Eupagurus Tanneri, Benedict.
Alaska; 50 to 550 fathoms.
72. Eupagurus trigonocheirus, Stimpson.
Alaska; 15 to 80 fathoms.
73. Parapagurus pilosimanus, Smith. In Epizoanthus paguriphilus, Verrill.
Off Marthas Vineyard; 300 fathoms.
74. Catapagurus Sharreri, A. M. Edw.
Off Marthas Vineyard; 120 fathoms.

Macrura.

75. Homarus americanus, M. Edw.
Southern New England; shallow water.
76. Crangon vulgaris, Fabr.
New England; shallow water.
77. Palæmonetes vulgaris, Stimpson.
Narragansett Bay; shore.
78. Sergestes arcticus, Kröyer.
North Atlantic; 400 to 650 fathoms.
79. Pontophilus norvegicus, Sars.
North Atlantic; 100 to 400 fathoms.
80. Pandalus borealis, Kröyer.
North Atlantic; 50 to 150 fathoms.
81. Pandalus leptocerus, Smith.
North Atlantic; 30 to 300 fathoms.
82. Pandalus Montagui, Leach.
North Atlantic; 30 to 80 fathoms.
83. Pandalus propinquus, G. O. Sars.
North Atlantic; 150 to 500 fathoms.
84. Hippolyte Gaimardii, M. Edw.
North Atlantic; 40 fathoms.
85. Hippolyte Liljeborgii, Dan.
North Atlantic; 100 to 300 fathoms.
86. Hippolyte macilenta, Kröyer.
Grand Bank; 67 fathoms.
87. Hippolyte spinus, Leach.
North Atlantic; 40 to 45 fathoms.
88. Nematocarcinus ensiferus, Smith.
East coast United States; 700 to 2,000 fathoms.
89. Latreutes ensiferus, Stimpson.
North Atlantic; surface.
90. Leander tenuicornis, Kingsley.
North Atlantic; surface.
91. Cambarus affinis (Say).
Pennsylvania; fresh water.
92. Cambarus Bartonii (Fabr.).
Virginia, District of Columbia; fresh water.

CRUSTACEA—continued.

Macrura—Continued.

93. Cambarus Blandingii acutus, Faxon.
Alabama, Louisiana; fresh water.

Schizopoda.

94. Mysis americana, Smith.
Woods Holl, Mass.; surface.

Cumacea.

95. Diastylis quadrispinosus, G. O. Sars.
Block Island Sound; shallow water.

Isopoda.

96. Idotea robusta, Kröyer.
Off Block Island; surface.

Amphipoda.

97. Orchestia agilis, Smith.
Newport, R. I.; shore.
98. Talorchestia longicornis, Smith.
New Haven, Conn.; shore.
99. Unciola irrorata, Say.
Southern New England; low water to 400 fathoms.
100. Caprella geometrica, Say.
Woods Holl, Mass.; shallow water along shore.

Cirripedia.

101. Balanus porcatus, Costa.
Off Chatham, Mass.; shallow water.
102. Lepas anatifera, Linné.
Gulf Stream; floating, on logs.

MEROSTOMATA.

103. Limulus polyphemus, Latreille.
Southern New England; along shore.

ANNELIDA.

Chætopoda.

104. Aphrodita aculeata, Linné.
Off Marthas Vineyard; deep water.
105. Chætopterus pergamentaceus.
Tubes. Vineyard Sound; along shore.
106. Cirratulus grandis, Verrill.
Southern New England; shore.

ANNELIDA—continued.

Chætopoda—Continued.

107. Hyalinœcia artifex, Verrill.
Off Marthas Vineyard; 150 to 400 fathoms.
108. Hyalinœcia artifex, Verrill.
Tubes. Off Marthas Vineyard; 150 to 400 fathoms.
109. Lepidonotus squamatus, Leach.
New England; along shore.
110. Nephthys incisa, Malmgren.
Narragansett Bay; 5 to 10 fathoms.
111. Nereis pelagica, Linné.
Vineyard Sound; shallow water.
112. Nothria conchylega, Malmgren.
Long Island Sound; 4 fathoms.
113. Rhynchobolus dibranchiatus, Verril.
Naushon Island, Mass.; shore.
114. Thelepus cincinnatus, Malmgren.
Off New England coast; shallow water.
115. Trophonia affinis, Verrill.
Narragansett Bay; 10 to 20 fathoms.

Gephyrea.

116. Phascolosoma Gouldii, Dies.
Naushon Island, Mass.; shore.

TUNICATA.

117. Amarœcium constellatum, Verrill.
Woods Holl, Mass.; low tide.
118. Amarœcium pellucidum, Verrill.
Vineyard Sound; low tide.
119. Amarœcium stellatum, Verrill.
Vineyard Sound; low tide.
120. Ascidiopsis complanata, Verrill.
Eastport Harbor, Me.
121. Boltenia Bolteni (Linné).
Eastport Harbor, Me.
122. Botryllus Gouldii, Verrill.
Vineyard Sound, Buzzards Bay.
123. Ciona ocellata, Verrill.
Newport Harbor, R. I.
124. Halocynthia pyriformis, Verrill.
Bay of Fundy.
125. Leptoclinum albidum, Verrill.
Vineyard Sound.
126. Perophora viridis, Verrill.
Woods Holl, Mass.; shallow water.
127. Salpa Caboti, Desor.
Vineyard Sound; surface.

TUNICATA—continued.

128. Salpa, sp.
Off Marthas Vineyard; surface.

MOLLUSCOIDA.

Polyzoa.

129. Bugula turrita, Verrill.
Southern New England; shallow water.

130. Gemellaria loricata, Busk.
Off Cape Cod, Mass.; 27 to 30 fathoms.

ECHINODERMATA.

Holothurioidea.

131. Thyone briareus, Selenka.
Massachusetts and North Carolina; shallow water.
132. Euphronides cornuta, Verrill.
Off Chesapeake Bay; 1,500 to 1,700 fathoms.

Echinoidea.

133. Cidaris tribuloides, Blainville.
Gulf of Mexico; 24 fathoms.
134. Dorocidaris papillata, A. Ag., var.
North Carolina to Florida; 50 to 100 fathoms.
135. Echinus norvegicus, Düb. & K.
Northeast coast America; 100 to 1,300 fathoms.
136. Arbacia punctulata, Gray.
Southern New England; shallow water.
137. Arbacia stellata, Gray.
Gulf of California; shallow water.
138. Toxopneustes variegatus, A. Ag.
Florida; shallow water.
139. Strongylocentrotus dröbachiensis, A. Ag.
North Pacific and North Atlantic; low tide, shallow water.
140. Echinometra subangularis, Desm.
Florida and Bahamas; shallow water.
141. Cœlopleurus floridanus, A. Ag.
From Cape Hatteras to Havana; 60 to 220 fathoms.
142. Echinanthus rosaceus, Gray.
Nassau, New Providence; shallow water.

ECHINODERMATA—continued.

Echinoidea—Continued.

143. Echinarachnius excentricus, Val.
San Diego, Cal.; shallow water.
144. Echinarachnius parma, Gray.
North Atlantic; North Pacific; shallow water.
145. Mellita testudinata, Klein.
North and South Carolina and Florida; shallow water.
146. Encope Michelini, Agassiz.
Coast of Southern States; 20 to 30 fathoms.
147. Clypeaster Ravenellii, A. Ag.
Gulf of Mexico; 35 fathoms.
148. Clypeaster subdepressus, Agassiz.
Gulf of Mexico; 30 fathoms.
149. Phormosoma placenta, Wyv-Thom.
Off Marthas Vineyard; 900 to 1,200 fathoms.
150. Asthenosoma hystrix, A. Ag.
Off South Carolina; 250 fathoms.
151. Linopneustes longispinus, A. Ag.
Bahamas; 338 fathoms.
152. Schizaster fragilis, Agassiz.
Northeast coast of America; 100 to 500 fathoms.

Asterioidea.

153. Archaster Agassizii, Verrill.
Off Marthas Vineyard; 300 to 1,000 fathoms.
154. Archaster americanus, Verrill.
Off Marthas Vineyard; 50 to 200 fathoms.
155. Archaster floræ, Verrill.
Off Marthas Vineyard; 100 to 300 fathoms.
156. Archaster grandis, Verrill.
East coast United States; 1,400 to 1,600 fathoms.
157. Archaster tenuispinus, Düb. and K.
East coast United States; 1,200 to 1,400 fathoms.
158. Asterias Forbesii, Verrill.
New England.
159. Asterias Tanneri, Verrill.
East coast United States; 50 to 100 fathoms.
160. Asterias vulgaris, Stimpson.
Northeast coast North America; shallow water.
161. Cribrella sanguinolenta, Lütken.
Northeast coast North America; shallow water.

ECHINODERMATA—continued.

Asterioidea—Continued.

162. Ctenodiscus crispatus, D. and K.
Northeast coast North America; shallow water.
163. Diplopteraster multipes, Verrill.
Off Marthas Vineyard; 150 to 250 fathoms.
164. Heliaster microbrachia, Xantus.
West coast of Mexico and Central America; shallow water.
165. Leptasterias compta, Verrill.
Off New England coast; shallow water.
166. Luidia clathrata, Lütken.
From Cape Hatteras to Florida; 13 to 18 fathoms.
167. Odontaster hispidus, Verrill.
Off Marthas Vineyard; 89 to 225 fathoms.
168. Oreaster reticulatus, M. and T.
Jamaica and Florida; shallow water.
169. Benthopecten spinosus, Verrill.
Off Marthas Vineyard; 1,500 fathoms.
170. Porania grandis, Verrill.
East coast United States; 85 to 150 fathoms.
171. Stephanasterias albula, Verrill.
Off Marthas Vineyard; 70 to 100 fathoms.
172. Zoroaster diomedeæ, Verrill.
Off Marthas Vineyard; 1,200 to 1,500 fathoms.

Ophiuroidea.

173. Ophiacantha bidentata, Ljg.
Off Marthas Vineyard; 70 to 200 fathoms.
174. Ophiacantha millespina, Verrill.
Off Marthas Vineyard; 100 to 250 fathoms.
175. Ophiactis Müilleri, Ltk., var. quinqueradia.
Gulf of Mexico and Caribbean Sea; 26 to 34 fathoms.
176. Ophiocamax fasciculata, Lyman.
Caribbean Sea; 208 fathoms.
177. Ophiocamax hystrix, Lyman.
Caribbean Sea; 150 to 250 fathoms.
178. Ophiocnida olivacea, Lyman.
Off Marthas Vineyard; 120 fathoms.

ECHINODERMATA—continued.

Ophiuroidea—Continued.

179. Ophioglypha acervata, Lyman.
Gulf of Mexico; 150 to 200 fathoms.
180. Ophioglypha convexa, Lyman.
Off North Carolina; 2,000 fathoms.
181. Ophioglypha lepida, Lyman.
Off Marthas Vineyard; 1,500 fathoms.
182. Ophioglypha lepida, Lyman, var. spinulosa Verrill.
Off Chesapeake Bay; 1,500 fathoms.
183. Ophioglypha robusta, Lyman.
Off Point Franklin, Alaska; 13 fathoms.
184. Ophioglypha Sarsii, Lyman.
North Atlantic; 20 to 100 fathoms.
185. Ophiomusium armigerum, Lyman.
Off Nantucket Shoals; 1,700 to 2,000 fathoms.
186. Ophiomusium Lymani, Wyv.-Thom.
Northeast coast America; 1,000 to 1,400 fathoms.
187. Ophiopholis aculeata, Gray.
Off New England coast; 15 to 250 fathoms.
188. Ophioscolex glacialis, M. & T.
Off Marthas Vineyard; 200 fathoms.
189. Ophiothrix angulata, Ayres.
West Indies; shallow water.
190. Amphiura macilenta, Verrill.
Off Marthas Vineyard; 63 fathoms.
191. Hemipholis cordifera, Lyman.
Trinidad; shallow water.
192. Astrochele Lymani, Verrill.
Off Marthas Vineyard; 450 to 550 fathoms.
193. Gorgonocephalus Agassizii, Lyman.
Off Cape Cod, Mass.; 30 fathoms.
194. Gorgonocephalus Lamarckii, Lyman.
Georges Bank; 125 fathoms.

Crinoidea.

195. Antedon dentata, Verrill.
Off Marthas Vineyard; 150 to 200 fathoms.

CŒLENTERATA.

Anthozoa.

196. Amphihelia oculata, Edw. & H.
Off Florida; 275 to 450 fathoms.
197. Astrangia danæ, Agassiz.
Woods Holl, Mass; low tide.
198. Dendrophyllia? profunda, Pour.
Off Georgia and Florida; 250 to 450 fathoms.
199. Flabellum Goodei, Verrill.
East coast United States, 200 to 800 fathoms.
200. Lophohelia prolifera, Edw. & H.
Off Florida, 277 to 434 fathoms.
201. Madracis decactis, Verrill.
Bermuda; shallow water.
202. Madrepora cervicornis, Lamk.
Florida; shallow water.
203. Madrepora palmata, Lamk.
Florida; shallow water.
204. Madrepora prolifera, Lamk.
Florida and Hayti; shallow water.
205. Manicina areolata, Ehr.
Key West, Fla.; shallow water.
206. Oculina diffusa, Lamk.
Florida; shallow water.
207. Oculina implicata, Ag., MS.
Off Cape Hatteras; 16 fathoms.
208. Forites astræoides, Lamk.
Florida and Bahamas; shallow water.
209. Porites clavaria, Lamk.
Florida; shallow water.
210. Porites furcata, Lamk.
Florida; shallow water.
211. Acanella Normani, Verrill.
Off Marthas Vineyard; 250 to 650 fathoms.
212. Primnoa reseda, Verrill.
Fishing banks, northeast coast of America; 100 to 250 fathoms.
213. Pennatula aculeata, K. & D.
Off Marthas Vineyard; 200 to 250 fathoms.
214. Gorgonia anceps, Pallas.
Florida; shallow water.

CŒLENTERATA—continued.

Anthozoa—Continued.

215. Gorgonia flabellum, Linné.
West Indies and Bahamas; shallow water.
216. Bolocera tuediæ, Gosse.
Off Marthas Vineyard; 200 to 250 fathoms.
217. Actinauge nodosa, Verrill.
Northeast coast America; 75 to 250 fathoms.
218. Sagartia abyssicola, Verrill.
Off Marthas Vineyard; 200 fathoms.
219. Metridium marginatum, M. Edw.
Newport, R. I. and Woods Holl, Mass.; shallow water.
220. Epizoanthus americanus, Verrill.
Off Marthas Vineyard; 100 to 200 fathoms.

Hydroidea.

221. Obelia geniculata, Hincks.
Off Block Island; 13 fathoms.
222. Pennaria tiarella, McCr.
Buzzards Bay.
223. Tubularia, sp.
Buzzards Bay.

PORIFERA.

224. Hircinia campana, Hyatt, var. turrita.
Harrington Sound, Bermuda.
225. Spongia tubulifera, Hyatt, var. turrita.
Harrington Sound, Bermuda.
226. Suberites compacta, Verrill.
Massachusetts; shallow water.
227. Tethya gravata, Hyatt.
Buzzards Bay, 5 fathoms,
228. Tuba vaginalis, var. crispa.
Harrington Sound, Bermuda.
229. Verongia fistularis? Hyatt.
Harrington Sound, Bermuda.

APPENDIX X.

Statement of the Distribution of Specimens during the Year ending June 30, 1895.

NORTH AMERICA.

Canada.

Ontario: Geological Survey of Canada, Ottawa: *Pachydiscus Newberryensis* (3 specimens); fossils (54 specimens). Lent for study. (D. 8523, 9173.)

Lambe, Lawrence M., Geological Survey of Canada, Ottawa: Set of duplicate Alaskan sponges. Exchange. (D. 9159.)

University of Toronto, Toronto: Worms (194 specimens). Exchange. (D. 8885.)

Whiteaves, J. F., Ottawa: *Anodonta fragilis* (2 specimens). Exchange. Fossils from Manitoba (54 specimens). For study and identification. (D. 8680.)

Mexico.

Guanajuato: Dugés, Alfred, Guanajuato: *Callisaurus ventralia* and *Charina plumbes* (1 specimen each). Exchange. (D. 9003.)

United States.

Alabama: Tuskegee Normal and Industrial Institute, Tuskegee: Marine invertebrates (624 specimens, series v, set 16); marine and fresh-water fishes. Gift. (D. 8783, 8832.)

Arkansas: McNeill, Jerome, Fayetteville: Collection of Orthoptera (132 specimens). For study. (D. 8838.)

California: Anthony, A. W., San Diego: Bird skin (1 specimen). For study. Bird skins (18 specimens). Exchange. (D. 8641, 8802.)

California State Mining Bureau, San Francisco: Minerals (33 specimens). Exchange. (D. 8862.)

California—Continued.

Gilbert, Charles H., Stanford University: Alcoholic fishes (4 specimens); *Icelus euryops* (1 specimen). For study. (D. 8736, 8880.)

Golden Gate Park Museum, San Francisco: Minerals (57 specimens, set 183); rocks and ores (91 specimens, set 103); casts of prehistoric stone implements (107 specimens, set 39); marine invertebrates (516 specimens, set 30, series v). Gift. (D. 8914.)

Holmes, Samuel J., University of California, Berkeley: Dried crabs (2 specimens). Lent for study. (D. 8740.)

Santa Barbara Society of Natural History, care of Frederick A. Woodworth, Santa Barbara: Marine invertebrates (set 194, series iv). Gift. (D. 8617.)

University of California, Berkeley: Collection of crustacea; Hippolyta (5 species). Exchange. (D. 8729, 8881.)

Van Denburgh, John, California Academy of Science, San Francisco: Lizards (15 specimens). Lent for study. (D. 8985.)

Colorado: High School, Central City: Rocks and ores (89 specimens, set 113). Gift. (D. 8790.)

State Normal School, Greeley: Marine invertebrates (376 specimens, set 73, series v). Gift. (D. 8891.)

Connecticut: Slater Memorial Museum, Norwich: Marine invertebrates (set 196, series iv). Gift. (D. 9065.)

Verrill, A. E., New Haven: Alcoholic fishes (100 specimens); samples of ocean bottom (103 specimens); crinoids. Exchange. Starfishes (5 specimens). Lent for study. Collection of parasites. Exchange. (D. 8715, 8721, 8963, 9046.)

DISTRICT OF COLUMBIA: Bolles, Mrs. E. C., Washington: Tapa cloth (2 pieces). Exchange. (D. 8933.)

Burns, Frank, U. S. Geological Survey, Washington: Specimens of crabs, 1 lobster, 1 sea urchin. Exchange. (D. 8609.)

Columbian University, Washington: Collection of rocks and ores. Gift. (D. 8601.)

Department of Agriculture (Division of Forestry), Washington: Set of mounted photographs of the trees of the Lower Wabash Valley. Gift. (D. 8810.)

Howell, E. E., Washington: Collection of ores; collection of crabs and foraminifera; sea fans (8 specimens) and sand dollars (200 specimens); June beetles (50 specimens). Exchange. (D. 8588, 8632, 8657, 8684.)

Rockhill, W. W., Washington: Duplicate Samoan Kava bowl. Exchange. (D. 8658.)

Schmid, E. S., Washington: Skeleton of parrot. Exchange. (D. 8955.)

Washington Seminary, Washington: Skeletons of fishes (32 specimens). Exchange. (D. 9066.)

Weed, W. H., U. S. Geological Survey, Washington: Rocks from Bear Paw Mountains (35 specimens). Lent for study. (D. 9123.)

Whitehead, Cabell, Washington: Specimen of monazite. Exchange. (D. 8568.)

GEORGIA: Georgia Female College, Gainesville: Rocks and ores (91 specimens, set 100). Gift. (D. 9100.)

Georgia State Industrial College, College: Rocks and ores (90 specimens, set 109); marine invertebrates (set 50, series I). Gift. (D. 8860, 8970.)

ILLINOIS: Baur, G., Walker Museum, Chicago: Specimens of reptiles for anatomical purposes; turtles for anatomical purposes (4 specimens). Skull and carapace of turtle. Lent for study. (D. 8662, 8763, 8969.)

Field Columbian Museum, Chicago: Cave material (2 boxes); rock sections (34 specimens). Exchange. (D. 8907, 9141.)

Illinois Wesleyan University, Bloomington: Bird skins (180 specimens); mammal skins and skulls (67 specimens). Gift. (D. 8741.)

Jefferson High School, care of F. W. Plapp, Ivory Park: Foraminifera. Gift. (D. 8545.)

Worthen, Charles K., Warsaw: Bird skins (15 specimens). Exchange. (D. 8871, 8943.)

INDIANA: St. Meinrad Abbey, St. Meinrad: Minerals (57 specimens, set 171). Gift. (D. 8459.)

Taylor University, Upland: Marine invertebrates (424 specimens, set 55, series V). Gift. (D. 8863.)

IOWA: American Archæological and Asiatic Association, Nevada: Casts of prehistoric stone implements (107 specimens, set 40). Gift. (D. 8984.)

High School, Boone: Marine invertebrates (372 specimens, set 78, series V). Gift. (D. 8863.)

High School, Britt: Marine invertebrates (352 specimens, set 87, series V). Gift. (D. 8787.)

High School, Northwood: Minerals (57 specimens, set 181); rocks and ores (90 specimens, set 107); marine invertebrates (360 specimens, set 81, series V). Gift. (D. 8858.)

High School, Sioux City: Rocks and ores (89 specimens, set 112); marine invertebrates (368 specimens, set 74, series V). Gift. (D. 8811.)

High School, West Union: Rocks and ores (91 specimens, set 101). Gift. (D. 8997.)

Historical Department of Iowa, Des Moines: Bird skins (272 specimens); marine invertebrates (set 198, series IV). Gift. (D. 8779, 9164.)

Iowa State Historical Society, care of Charles Aldrich, Des Moines: Mounted photographs of the trees of the Lower Wabash Valley. Gift. (D. 8809.)

Museum of Natural History, Iowa City: Collection of hydroids. Lent for study. (D. 8750.)

Natural Science Association, Ottumwa: Minerals (57 specimens, set 173). Gift. (D. 8551.)

Public School, Emmetsburg: Marine invertebrates (392 specimens, set 67, series V). Gift. (D. 8761.)

IOWA—Continued.

Public Schools, Mapleton: Rocks and ores (89 specimens); marine invertebrates (356 specimens, set 83, series v.) Gift. (D. 8841.)

Public School, Panora: Rocks and ores (91 specimens, set 104). Gift. (D. 8890.)

State University of Iowa, Iowa City: Small set duplicate marine invertebrates. Exchange. Marine invertebrates (524 specimens, set 29, series v). Gift. Lithodidæ (3 specimens). Exchange. (D. 8635, 8878, 9063.)

KANSAS: St. John's Lutheran College, Winfield: Casts of prehistoric stone implements (107 specimens, set 36); marine invertebrates (368 specimens, set 79, series v). Gift. (D. 8616, 8768.)

Kansas Wesleyan University, Salina: Casts of prehistoric stone implements (107 specimens, set 35); marine invertebrates (404 specimens, set 62, series v). Gift. (D. 8527.)

KENTUCKY: State College of Kentucky, Lexington: Marine invertebrates (392 specimens, set 63, series v); alcoholic fishes from Kentucky and Tennessee (45 specimens). Gift. (D. 8766, 8877.)

Ulrich, E. O., Newport: Silurian fossils (188 specimens, 44 species). Lent for study. *Ctenodonta similis* (4 specimens). (D. 8596, 8643.)

MARYLAND: Clark, W. B., Johns Hopkins University, Baltimore: Fossils (28 specimens). Lent for study. (D. 8996.)

Gane, H. S., Johns Hopkins University, Baltimore: Neocene corals (5 boxes). Lent for study. (D. 8876.)

Resler, A., Baltimore: Skins of Longspurs (5 specimens). Lent for study. (D. 8896.)

Woman's College of Baltimore, Baltimore: Herbarium specimens (241 specimens, set 37, series v); *Ctenodiscus crispatus* (8 specimens); *Archaster americanus* (10 specimens). Exchange. (D. 9000, 9020.)

MASSACHUSETTS: City Library Association, Springfield: Rocks and ores (89 specimens, set 111); minerals (57 specimens, set 179); marine invertebrates (520 specimens, set 28, series v); duplicate alcoholic fishes (100 specimens). Gift. (D. 8816, 8952.)

Crosby, W. O., Boston: Specimen of gypsum crystal. Exchange. (D. 8720.)

Faxon, Walter, Cambridge: Anoumran crabs (2 specimens). Lent for study. (D. 8612.)

Jonas Perkins School, East Braintree: Fossils (121 specimens); rocks and ores (29 specimens, set 29); minerals (57 specimens, set 192). Gift. (D. 9120.)

Lowell City Library, Lowell: Marine invertebrates (656 specimens, set 14, series v). Gift. (D. 8771.)

McPherson, William D., South Framingham: Volcanic specimens (28 specimens). Exchange. (D. 9112.)

Maynard, C. J., Newtonville: Bird skins (3 specimens). Lent for study. (D. 8928.)

Museum of Comparative Zoology, Cambridge: Collection of Solenogastoidæ (56 specimens). Exchange. (D. 8493.) Collection of Caloptenini (1,828 specimens); crayfishes (32 specimens). Lent for study. Crabs (117 specimens); alcoholic fishes, Atlantic and Pacific forms (152 specimens); collection of Alaskan sponges. Exchange. (D. 8655, 8748, 9126, 9146.)

Perkins Institution and Massachusetts School for the Blind, South Boston: Minerals (57 specimens, set 170); rocks and ores (85 specimens, set 119); marine invertebrates (400 specimens, set 61, series v). Gift. (D. 8458.)

Scudder, Samuel H., Cambridge: Mexican Orthoptera (9 specimens). Lent for study. (D. 8719.)

State Normal School, Bridgewater: Rocks and ores (91 specimens, set 105); marine invertebrates (416 specimens, set 57, series VI). Gift. (D. 8883.)

Westfield High School, Westfield: Marine invertebrates (608 specimens, set 18, series v). Gift. (D. 8777.)

MICHIGAN: Davis, G. C., Michigan Agricultural College, Lansing: Hymenoptera (5 specimens). Lent for study. (D. 8481.)

MICHIGAN—Continued.

Kent Scientific Institute, Grand Rapids: Specimen of *Pseudopleuronectes americanus;* rocks and ores (87 specimens, set 116); casts of prehistoric stone implements (107 specimens, set 37). Gift. (D. 8855, 8685.)

MINNESOTA: Pipestone Public Schools, Pipestone: Marine invertebrates (372 specimens, set 76, series V). Gift. (D. 8903.)

MISSISSIPPI: Mississippi Agricultural and Mechanical College, Agricultural College: Fossils (220 specimens). Exchange. (D. 9094.)

MISSOURI: Greger, D. K. F., Fulton: Fossils (27 species). Exchange. (D. 8815.)

Hurter, Julius, St. Louis: Reptiles (2 specimens). Exchange. (D. 8978.)

University of Missouri, Columbia: Marine invertebrates (424 specimens, set 56, series V). Gift. (D. 8945.)

MONTANA: University of Montana, Helena: Marine invertebrates (set 199, series IV); rocks and ores (92 specimens, set 98). Gift. (D. 9165.)

NEBRASKA: Bellevue College, Bellevue: Minerals (57 specimens, set 182). Gift. (D. 8882.)

Bruner, L., Lincoln: Orthoptera (865 specimens). Lent for study. (D. 8502.)

Lincoln Normal University, Lincoln: Minerals (57 specimens, set 180); marine invertebrates 512 specimens, set 35, series V). Gift. (D. 8840.)

University of Nebraska, Lincoln: Cretaceous fossils (42 specimens). Gift. (D. 8742.)

Ward, H. B., University of Nebraska, Lincoln: Collection of worms. Exchange. (D. 8814.)

NEW JERSEY: Ellis, J. B., Newfield: Fungus (2 specimens). Lent for study. (D. 8653.)

Smith, John B., New Jersey Agricultural Experiment Station, New Brunswick: Specimens of insects. Exchange. Fleas (15 specimens); microscopic slides (20). Lent for examination. (D. 8795, 8986, 9157.)

NEW YORK: Allen, J. A., American Museum of Natural History, New York City: Alcoholic bats (2 specimens); mammal skins and skulls (4 specimens); meadow mice (3 specimens); skin and skull of mouse; bird skins (10 specimens); mammal skins and skulls (8 specimens). Lent for study. (D. 8637, 8646, 8683, 8847, 8931, 9001.)

American Museum of Natural History, New York City: Bird skins (175 specimens). Exchange. (D. 8672, 9131.)

Boys' High School, Brooklyn: Marine invertebrates (392 specimens, set 69, series V). Gift. (D. 8785.)

Brown, Mrs. J. Crosby, New York City: Musical instruments (15). Exchange. (D. 8977.)

Chapman, F. M., New York City: Alcoholic shrews (3 specimens). Lent for study. (D. 8634.)

Clarke, J. M., Albany: Fossil sponges (8 specimens); fossils (2 specimens). Lent for study. (D. 8830, 9158.)

Dean, Bashford, Columbia College, New York: Alcoholic fishes (7 specimens). Lent for study. (D. 8688.)

Glen Island Museum, Glen Island: Collection of ethnological objects (82 specimens); cast of fossil turtle. Exchange. (D. 8745, 8701.)

Halcomb, E. G., Helena: Arrow and spear heads (43 specimens). Exchange. (D. 8919.)

Huntington, George S. (for medical department, Columbia College), New York: Mammals for anatomical purposes (19 specimens). (D. 8921.)

O'Grady, Miss M. I., Vassar College, Poughkeepsie: Specimens of parasitic worms. Exchange. (D. 8836.)

Osborn, Henry F., New York City: Fossil skull of rhinoceros. Lent for study. (D. 9124.)

Roberts, Dr. C. H., New York: Coleoptera (23 specimens). Exchange. (D. 9061.)

Thayer, A. H., Scarborough: Bird skins (2 specimens). Exchange. (D. 9073.)

Union College, Schenectady: Rocks and ores (104 specimens, set 9). Gift. (D. 8884.)

NORTH DAKOTA:

North Dakota Agricultural College, Fargo: Minerals (57 specimens, set 178); rocks and ores (88 specimens, set 114). Gift. (D. 8778.)

NORTH DAKOTA—Continued.
School for the Deaf, Devils Lake: Rocks and ores (91 specimens, set 102). Gift. (D. 8983.)
State Normal School, Mayville: Minerals (57 specimens, set 174); rocks and ores (86 specimens, set 117); marine invertebrates (404 specimens, set 63, series V). Gift. (D. 8578.)
OHIO: Dayton Public Library and Museum, Dayton: Marine invertebrates (404 specimens, set 64, series V); alcoholic fishes (100 specimens). Gift. (D. 8627, 8659.)
Greenwood, G. G. B., Minerva: Archæological objects (15 specimens). Exchange. (D. 8837.)
Ohio University, Athens: Specimens of foraminifera; marine invertebrates (508 specimens, set 36, series V). Gift. (D. 8856, 8913.)
Public School, West Milton: Rocks and ores (85 specimens, set 118). Gift. (D. 8550.)
School of the Sisters of St. Marys of the Springs, Shepard: Marine invertebrates (set 197, series IV); casts of prehistoric stone implements (107 specimens, set 45); rocks and ores (91 specimens, set 99); ethnological objects (8 specimens). Gift. (D. 9153.)
Storkes, Miss S. D., Cleveland: Insects (20 specimens). For study. (D. 8611.)
OREGON: Bretherton, Bernard J., Westport: Bird skins (15 specimens). Exchange. (D. 8743.)
PENNSYLVANIA: Allen, Harrison, Philadelphia: Bats (3 specimens). Lent for study. (D. 8480.)
Central High School, Harrisburg: Marine invertebrates (640 specimens, set 15, series V). Gift. (D. 8791.)
Clark, Hubert L., Cresson: Alcoholic birds (21 specimens). Lent for study. (D. 8511.)
Cope, E. D., Philadelphia: Skeletons of lizards (7 specimens); skeleton of horned toad; skeletons of lizards (3 specimens); vertebræ of snakes. Lent for study. (D. 8529, 8831, 8875, 9017.)
Culin, Stewart, University of Pennsylvania, Philadelphia: Games and gambling apparatus. Exchange. (D. 8898.)

PENNSYLVANIA—Continued.
Danville High School, Danville: Marine invertebrates (356 specimens, set 84, series V). Gift. (D. 8828.)
Dietz, William, Hazleton: *Ceutorrhynchini* (239 specimens). Lent for study. (D. 9024.)
Juniata College, Huntington: Rocks and ores (90 specimens, set 108); marine invertebrates (360 specimens, set 80, series V). Gift. (D. 8859.)
Lehman, W. V., Tremont: Shells (135 specimens). Exchange. (D. 8799.)
Moore, J. Percy, University of Pennsylvania, Philadelphia: Collection of leeches. Lent for study. (D. 8872.)
Normal School, Philadelphia: Marine invertebrates (652 specimens, set 12, series V); set of duplicate fishes (140 specimens); minerals (57 specimens, set 176). Gift. (D. 8476, 8538, 8623.)
Philadelphia School Museum, Philadelphia: Marine invertebrates (600 specimens, set 19, series V); Minerals (57 specimens, set 175). Gift. (D. 8543, 8618.)
Potts, Edward, Philadelphia: Collection of fresh-water sponges. Lent for study. (D. 8770.)
Reinick, W., Philadlelphia: Beetles (4 species). Exchange. (D. 8460.)
Rhoads, Samuel N., Philadelphia: Skins and skulls of Geomys (11 specimens); mammal skins and skulls (6 specimens). Lent for study. (D. 8503, 8663.)
Stone, Witmer, Philadelphia: Bird skins (14 specimens). Lent for study. (D. 8813, 9049.)
Wagner Free Institute of Science, Philadelphia: Fossils (194 specimens). Exchange. (D. 9002.)
Warren Public School, Warren: Marine invertebrates (376 specimens, set 72, series V). Gift. (D. 8786.)
RHODE ISLAND: Rhode Island College of Agriculture and Mechanic Arts, Kingston: Minerals (57 specimens, set 177); rocks and ores (87 specimens, set 115). Gift. (D. 8775.)
SOUTH CAROLINA: Darlington Public Schools, Darlington: Marine invertebrates (356 specimens, set 82, series V). Gift. (D. 8769.)
The Thornwell Orphanage, Clinton: Marine invertebrates (380 specimens, set 71, series V). Gift. (D. 8767.)

SOUTH DAKOTA: High School, Hot Springs: Rocks and ores (90 specimens, set 106). Gift. (D. 8873.)

TENNESSEE: American Temperance University, Harriman: Marine invertebrates (356 specimens, set 85, series V). Gift. (D. 8773.)

Pelisipi College, Clinton: Minerals (57 specimens, set 171). Gift. (D. 8471.)

VIRGINIA: College of William and Mary, Williamsburg: Marine invertebrates (352 specimens, set 88, series V). Gift. (D. 8774.)

Mearns, Dr. E. A., Fort Myer: Skins of rabbits (184 specimens); skulls of rabbits (135 specimens). Lent for study. (D. 8725, 8897.)

WASHINGTON: Dennison, G. W., Smiths Island: Bird skins (3 specimens). Exchange. (D. 9054.)

WISCONSIN: Black Earth High School, Black Earth: Marine invertebrates (356 specimens, set 86, series V). Gift. (D. 8845.)

Free High School, Arcadia: Marine invertebrates (384 specimens, set 70, series V). Gift. (D. 8772.)

High School, Omro: Marine invertebrates (576 specimens, set 21, series V). Gift. (D. 8760.)

Milton College, Milton: Specimens of passenger pigeon; marine invertebrates (set 195, series IV); bird skins (196 specimens, representing 137 genera and 189 species). Gift. (D. 8843, 8998, 9043.)

SOUTH AMERICA.

Argentine Republic.

Buenos Ayres Museum, Buenos Ayres: Shells (54 species). Exchange. (D. 8592.)

National Museum, Buenos Ayres: Bird skins (159 specimens). Exchange. (D. 9182.)

Normal School, Goya: Casts of prehistoric stone implements (set 43). Gift. (D. 9117.)

EUROPE.

Austria.

Wohlgemuth, Karl, Bozen (South Tyrol): American ethnological objects (14 specimens). Exchange. (D. 8924.)

Natural History Museum, Vienna: Stone implements (143 specimens, sets 9, 10); casts of prehistoric stone implements (107 specimens, set 42); holothurians (16 specimens, set 3). Exchange. (D. 9087, 9134.)

Schmidhoffen, Victor Ritter Tschusi von, Hallein, Salzburg: Bird skins (11 specimens). Exchange. (D. 8642.)

Stossich, Prof. M., Triest: Parasitic worms (9 specimens). Exchange. (D. 8776.)

Denmark.

Royal Ethnographic Museum, Copenhagen: American aboriginal quarry specimens (125); ethnological objects from the Pueblo region (111 specimens). Exchange. (D. 8516, 8673, 8930.)

Royal Zoological Museum, Copenhagen: Holothurians (17 specimens, set 5). Exchange. (D. 9136.)

England.

Boucard, A., Spring Vale, Ise of Wight: Bird skins (2 specimens). Exchange. (D. 8781.)

British Museum, London: Casts of reptiles (12 specimens); holothurians (16 specimens, set 1). Exchange. (D. 9075, 9133.)

Hewlett, S. G., Eastbourne: Archæological objects (200 specimens). Exchange. (D. 8901.)

Horniman Museum, Forest Hill, London: Casts of prehistoric stone implements (set 41). Exchange. (D. 9030.)

Lovett, Edward, Croydon: Ethnological objects (7 specimens). Exchange. (D. 9121.)

Museum of Natural History, Oxford: American aboriginal quarry implements (125 specimens). Exchange. (D. 8513.)

Powell, T. H., London: Archæological objects (212 specimens). Exchange. (D. 8906.)

Pycraft, W. P., University Museum, Oxford: Bird skins (27 specimens). Lent for study. (D. 8495.)

Tristram, H. B., Durham: Bird skins (19 specimens). Exchange. (D. 9033.)

France.

Blanchard, Prof. R., Paris: Microscopic slides of parasitic worms (32 specimens). Exchange. (D. 8739, 8758.)

Museum of Natural History, Paris: *Loxorhynchus grandis* (1 specimen); deep sea fishes (42 specimens); *Pentacrinus decorus* (1 specimen); holothurians (17 specimens, set 4). Exchange. (D. 9074, 9156, 9135.)

Musée Trocadéro, Paris: American aboriginal quarry implements (125 specimens). Exchange. (D. 8514.)

Renault, B., Paris: Cannel coal (17 specimens). Exchange. (D. 8971.)

University of Caen, Caen: Fossils (112 specimens). Exchange. (D. 9104.)

Germany.

Anatomic-Zoological Institute of the University, Bonn am Rhein: Holothurians (23 specimens). Exchange. (D. 9147.)

Boettger, Dr. O., Frankfort: Reptiles (3 specimens). Exchange. (D. 9004.)

Getschmann, R., Rixdorf, near Berlin: Samples of infusorial earths. Exchange. (D. 9166.)

Looss, Dr. A., Zoological Institute, Leipzig: Collection of parasitic worms. Exchange. (D. 8788.)

Royal Biological Station, Helgoland: Plaster cast of fish (*Cyclopterus lumpus*). Exchange. (D. 9127.)

Royal Ethnographic Museum, Berlin: American aboriginal quarry objects. (125 specimens.) Exchange. (D. 8515.)

Von Ihering, Dr. H., Hamburg: Collection of unionidæ. Exchange. (D. 8633.)

Holland.

Roon, E. van, Rotterdam: Coleoptera (54 specimens). Exchange. (D. 9145.)

Russia.

Skarjinsky, Madam, Poltava, Little Russia: American ethnological objects. Exchange. (D. 8908.)

ASIA.

India.

Indian Museum, Calcutta: Dried plants (1,136 specimens); deep sea fishes (83 specimens); Holothurians (16 specimens, set 2). Exchange. (D. 8727, 9103, 9132.)

Japan.

Imperial Japanese Commission, Tokio: Specimens illustrating the chemical elements and compounds of the human body; rocks, ores and minerals. Exchange. (D. 8603, 8926.)

Newton, J. C. Calhoun, Kobé: Ethnological specimens, casts of the Temple stone, Siloam inscription, and facsimiles and casts of Assyrian and Babylonian seals. Exchange. (D. 8910.)

Sapporo Museum, Sapporo: American ethnological objects (24 specimens). Exchange. (D. 8911.)

Syria.

Syrian Protestant College, Beyrout: Marine invertebrates (652 specimens, set 13, series V); special set of marine invertebrates (40 specimens); collection of shells (56 specimens); alcoholic fishes (8 specimens). Exchange. (D. 8730.)

OCEANICA.

Australia.

NEW SOUTH WALES: H. Wood, Under Secretary, Department of Mines and Agriculture, Sidney: Collections of fossils and plants (1,100 specimens). Exchange. (D. 8482.)

SOUTH AUSTRALIA: Edgar J. Bradley, Happy Valley Water Works: Foraminifera. Exchange. (D. 8912 and 9140.)

New Zealand.

New Zealand Philosophical Society, Nelson: Casts of prehistoric stone implements (set 38). Gift. (D. 8976.)

APPENDIX XI.

The Work of the Mechanics and Laborers.

The following condensed statement is made up from the report submitted by Mr. Henry Horan, superintendent of buildings, and is intended to indicate, in a general way, the character of the work performed by the members of the force connected with his department:

1894.

July.—A set of bookshelves was constructed at the west end of the lecture hall for the use of the Museum library. All of the exhibition cases in the north hall were thoroughly cleaned and the woodwork repolished. The model of the Zuñi Indian village was removed from the department of prehistoric anthropology to the Museum building. New steam coils were placed in several of the halls of the Museum, and the radiators in the northeast court and in the boat hall were placed on the top of the wall cases recently constructed. Several exhibits in the section of fisheries, including the deep-sea sounding apparatus, were taken down and sent to storage.

August.—Exhibition cases were constructed in the room on the first floor of the south tower of the Smithsonian building for the use of the section of physical apparatus. Repairs were made to the floor in the lecture hall. The "Quarry Group" was transferred from the department of ethnology to the department of prehistoric anthropology. The lecture hall was prepared for a meeting of the Association of Agricultural Chemists, held August 23–25. Workmen were engaged for several days in enlarging one of the chimneys in the northwest pavilion. In anticipation of the meeting of the Knights of Pythias in this city, and the large number of strangers expected, all of the cases were removed from the rotunda, in order that the crowds might be handled more readily.

September.—A large radiator was placed in the paint shop, proper connections being made with the boiler room in the Smithsonian building. Repairs were made to the boilers in the Museum building, the work being performed by contract. The east balcony and the adjacent offices were fitted up for the use of the National Herbarium. The boiler and pump rooms in the Smithsonian building were cleaned and whitewashed. Direct connections were made by telephone between the Museum and the Department of Agriculture.

October.—The door-screen cases between the piers in the northwest range were replaced by pier cases. Trenches were dug and steam pipes laid from the Smithsonian building to the Astro-Physical Observatory. All of the steam pipes in the basement of the northwest pavilion were removed, and the heating apparatus in the upper stories of this section of the building overhauled. Repairs were made to the floor in the fisheries hall. The electric wires and batteries in the northwest pavilion were overhauled, the wires in the Assistant Secretary's office being placed under the floor. The work of putting the east balcony into condition for the National Herbarium, constructing and erecting cases, etc., was continued. Stationary bookcases of oak were constructed in the office of the Assistant Secretary. The large iron safe in the office of the chief clerk was set in the wall, in a space cut for the purpose. Ventilators were placed in the telephone room and in the offices of the superintendent and property clerk.

November.—A new switchboard was placed in the telephone room, and several additional instruments were installed in different parts of the building. New steam pipes were placed in the office of the department of fishes. A large exhibition case, which had heretofore been in the center of the northwest court, was remodeled and made into two wall cases, which will be set up in the section of oriental antiquities. Several pier cases were set up in the mineral hall, in place of the door-screen cases, which have been removed.

December.—All of the cases in the department of prehistoric anthropology were thoroughly cleaned. The lecture hall was put in condition for the use of the American Historical Society, whose meetings opened December 27. Considerable work was done in the southeast court, preparatory to its occupancy as the exhibition hall of the paleontological department.

1895.

January.—Work in the southeast court was continued. A number of screens were altered, and these and the walls were painted. The plaster casts and models were moved from the basement rooms under the north tower of the Smithsonian building. The exhibition cases in the department of comparative anatomy were rearranged. All of the oils and inflammable materials, which were formerly stored in the alcohol room in the basement of the Smithsonian building, were removed to other quarters.

February.—A section of the mahogany wall case on the north side of the exhibition hall of the department of comparative anatomy was removed in order to provide an entrance to the southeast court from this side. The fire plug in the east-south range was removed and placed just inside the entrance to the southeast pavilion. The north and west basement rooms of the Smithsonian building were fitted up with shelves and will be used for the storage of plaster casts and molds. Watch boxes were placed in several of the outbuildings.

March.—A telephone instrument was placed in the carpenter shop, and connections made with the telephone room. Watch boxes were erected on the second floor of each of the four balconies of the Museum building. Two fire plugs in the east hall were removed and placed inside of the east entrance to the building. The location of the fire plug in the fisheries hall was also changed.

April.—A force of men were engaged for several days in hanging the models of Indian villages on the walls of the northwest court. A man was detailed from each of the night watches for duty outside of the larger buildings, the object being to give better protection to the sheds and outbuildings. A hose reel was placed just outside the south entrance to the Smithsonian building, the hose being kept constantly attached to the fire plug and ready for immediate use. A ladder and ax have also been placed within easy reach, and connections with the telephone room established, so that help may be readily summoned in case of fire.

May.—For several days a number of men were engaged in rearranging the cases in the mineral hall. Improvements were made in one of the rooms on the second floor of the west balcony. It is proposed to place toilet rooms in the basement and on the first and second floors of the south tower of the Smithsonian building. This work was commenced about the middle of the month. A number of long-distance telephones were put up by the telephone company in place of the old style of instrument formerly in use. This change necessitated additional wires, as the new instruments require a metallic circuit.

June.—An additional watch box was placed in the Museum carpenter shop. New quarters for storage purposes were rented, and the work of removing material to the new building occupied considerable time during the month. Door-screen cases were placed between the piers above the wall cases in the department of comparative anatomy. The steam valves of the radiators throughout the buildings were examined and a portion of them repacked. The boiler rooms and coal vaults were thoroughly renovated and whitewashed.

PART II.

PAPERS DESCRIBING AND ILLUSTRATING COLLECTIONS IN THE U. S. NATIONAL MUSEUM.

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THE SOCIAL ORGANIZATION AND THE SECRET SOCIETIES OF THE KWAKIUTL INDIANS,

BY

FRANZ BOAS.

BASED ON PERSONAL OBSERVATIONS AND ON NOTES MADE BY MR. GEORGE HUNT.

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THE SOCIAL ORGANIZATION AND THE SECRET SOCIETIES OF THE KWAKIUTL INDIANS.

By FRANZ BOAS.

PREFACE.

The following paper describes and illustrates the collections of the U. S. National Museum referring to the social organization and secret societies of the Indians of the coast of British Columbia. It is based on studies made by the author during a series of years. The great body of facts presented here were observed and recorded by Mr. George Hunt, of Fort Rupert, British Columbia, who takes deep interest in everything pertaining to the ethnology of the Kwakiutl Indians and to whom I am under great obligations. I am indebted to him also for explanations of ceremonials witnessed by myself, but the purport of which was difficult to understand, and for finding the Indians who were able to give explanations on certain points.

My thanks are due to Mr. C. O. Hastings, of Victoria, British Columbia, who took a series of photographs, reproductions of which will be found in this report. A series of phonographic records of songs belonging to the ceremonials were transcribed by Mr. John C. Fillmore and myself. I also had opportunity to verify many of the phonographic records by letting the Indians repeat the songs two years after the records had been taken.

I have also to thank Prof. A. Bastian, director of the Royal Ethnographical Museum at Berlin, Sir Augustus W. Franks, keeper of the ethnographical department of the British Museum, Mr. Franz Heger, director of the ethnographical department of the Imperial Royal Museum of Natural History at Vienna, and Prof. F. W. Putnam, curator of the department of anthropology of the American Museum of Natural History at New York, for permission to use specimens contained in the collections of these museums for illustrating the present report.

The following alphabet has been used in transcribing Indian words and names:

a, e, i, o, u,	have their continental sounds (short).
ā, ē, ī, ō, ū,	long vowels.
ᵘ	not articulated, but indicated by position of the mouth.
ᴇ	obscure e, as in flower.
ä̃	in German *Bär*.
â	aw in law.
ô	o in German *voll*.
ê	e in bell.
î	i in hill.
–	separates vowels which do not form diphthongs.
ai	i in island.
au	ow in how.
l	as in English.
ɪ	posterior, palatal l; the tip of the tongue touches the alveoli of the lower jaw, the back of the tongue is pressed against the hard palate, sonant.
ʟ	the same, short and exploded (surd).
q	velar k.
ɠ	velar g.
k	English k.
k·	palatized k, almost ky.
g·	palatized g, almost gy.
x	ch in German *Bach*.
X	x pronounced at posterior border of hard palate, between x and x·.
x·	palatal ch in German *ich*.
s	as in English.
c	English sh.
d, t b, p g, k	as in English, but surd and sonant are difficult to distinguish.
h	as in English.
y	as in year.
w m n	as in English.
’	a pause; when following a consonant combined with increase of stress of articulation.
′	accent.

The texts of Indian songs, phrases, and legends do not lay any claim to philological accuracy. They are merely inserted here as authenticating the translations and the material presented in this paper. It may be that a further study of the songs will modify the translations in many respects. The obscurity of the songs is often very great,

and my knowledge of the language is not sufficient to overcome the difficulties of an adequate translation.

I. The Indian Tribes of the North Pacific Coast.

The Pacific Coast of America between Juan de Fuca Strait and Yakutat Bay is inhabited by a great many Indian tribes distinct in physical characteristics and distinct in languages, but one in culture. Their arts and industries, their customs and beliefs, differ so much from those of all other Indians that they form one of the best defined cultural groups of our continent.

While a hasty glance at these people and a comparison with other tribes emphasize the uniformity of their culture, a closer investigation reveals many peculiarities of individual tribes which prove that their culture has developed slowly and from a number of distinct centers, each people adding something to the culture which we observe at the present day.

The region inhabited by these people is a mountainous coast intersected by innumerable sounds and fiords and studded with islands, large and small. Thus intercourse along the coast by means of canoes is very easy, while access to the inland is difficult on account of the rugged hills and the density of the woods. A few fiords cut deep into the mainland, and the valleys which open into them give access to the heart of the high ranges which separate the coast from the highlands of the interior, forming an effectual barrier between the people of the interior and those of the coast. These fiords and their rivers and valleys offer comparatively easy access to the coast, and along these lines interchange of culture has taken place. Extending our view a little beyond the territory defined above, the passes along which the streams of culture flowed most easily were Columbia River in the south and the pass leading along Salmon and Bella Coola rivers to Dean Inlet and Bentinck Arm. Of less importance are Chilcat Pass, Stikine River, Nass and Skeena rivers, and Fraser River. Thus it will be seen that there are only two important and four less important passes, over which the people of the coast came into contact with those of the interior. Thus they have occupied a rather isolated position and have been able to develop a peculiar culture without suffering important invasions from other parts of America.

As the precipitation all along the coast is very great, its lower parts are covered with dense forests which furnish wood for building houses, canoes, implements, and utensils. Among them the red cedar (*Thuya gigantea*) is the most prominent, as it furnishes the natives with material for most manufactures. Its wood serves for building and carving; its bark is used for making clothing and ropes. The yellow cedar, pine, fir, hemlock, spruce, yew tree, maple, alder, are also of importance to the Indians. The woods abound with numerous kinds of berries, which

are eagerly sought for. The kelp and seaweeds which grow abundantly all along the shore are also utilized.

In the woods the deer, the elk, the black and grizzly bear, the wolf, and many other animals are found. The mountain goat lives on the higher ranges of the mainland. The beaver, the otter, marten, mink, and fur seal furnish valuable skins, which were formerly used for blankets. The Indians keep in their villages dogs which assist the hunters.

The staple food of the Indians is, however, furnished by the sea. Seals, sea lions, and whales are found in considerable numbers; but the people depend almost entirely upon various species of salmon, the halibut, and the oulachon or candlefish (*Thaleichthys pacificus*, Girard), which are caught in enormous quantities. Various specimens of cod and other sea fish also furnish food. Herrings visit the coast early in spring. In short, there is such an abundance of animal life in the sea that the Indians live almost solely upon it. Besides fish, they gather various kinds of shellfish, sea urchins, and cuttlefish.

The people are, therefore, essentially fishermen, all other pursuits being of secondary importance. Whales are pursued only by the tribes of the west coast of Vancouver Island. Other tribes are satisfied with the dead carcasses of whales which drift ashore. Sea lions and seals are harpooned, the barbed harpoon point being either attached to a bladder or tied to the stern of the canoe. The harpoon lines are made of cedar bark and sinews. The meat of these sea animals is eaten, while their intestines are used for the manufacture of bowstrings and bags. Codfish and halibut are caught by means of hooks. These are attached to fish lines made of kelp. The hook is provided with a sinker, while the upper part is kept afloat by a bladder or a wooden buoy. Cuttlefish are used for bait. The fish are either roasted over or near the fire or boiled in wooden kettles by means of red-hot stones. Those intended for use in winter are split in strips and dried in the sun or over the fire. Salmon are caught in weirs and fish traps when ascending the rivers, or by means of nets dragged between two canoes. Later in the season salmon are harpooned. For fishing in deeper water, a very long double-pointed harpoon is used. Herring and oulachon are caught by means of a long rake. The oulachon are tried in canoes or kettles filled with water, which is heated by means of red-hot stones. The oil is kept in bottles made of dried kelp. In winter, dried halibut and salmon dipped in oil is one of the principal dishes of the tribes living on the outer coast. Clams and mussels are collected by the women; they are eaten fresh, or strung on sticks or strips of cedar bark and dried for winter use. Cuttlefish are caught by means of long sticks; sea eggs are obtained by means of round bag nets. Fish roe, particularly that of herring, is collected in great quantities, dried, and eaten with oil.

Sea grass, berries, and roots are gathered by the women. The sea grass is cut, formed into square cakes, and dried for winter use. The same is done with several kinds of berries, which when used are dissolved in water and eaten mixed with fish oil. Crab-apples are boiled

and kept in their juice until late in the winter. They are also eaten with fish oil. The food is kept in large boxes which are bent of cedar wood, the bottom being sewed to the sides.

In winter, deer are hunted. Formerly bows and arrows were used in their pursuit, but these have now been replaced by guns. The bow was made of yew wood or of maple. The arrows had stone, bone, and copper points. Bows and arrows were carried in wooden quivers. Deer are also captured by being driven into large nets made of cedar bark, deer sinews, or nettles. Elks are hunted in the same way. For smaller animals traps are used. Deer and bears are also caught in large traps. Birds were shot with arrows provided with a thick blunt point. Deer-skins are worked into leather and used for various purposes, principally for ropes and formerly for clothing.

The natives of this region go barelegged. The principal part of their clothing is the blanket, and this was made of tanned skins or woven of mountain-goat wool, dog's hair, feathers, or a mixture of both. The thread is spun on the bare leg and by means of a spindle. Another kind of blanket is made of soft cedar bark, the warp being tied across the weft. These blankets are trimmed with fur. At the present time woolen blankets are most extensively used. At festive occasions "button blankets" are worn. Most of these are light blue blankets with a red border set with mother-of-pearl buttons. Many are also adorned with the crest of the owner, which is cut out in red cloth and sewed on to the blanket. Men wear a shirt under the blanket, while women wear a petticoat in addition. Before the introduction of woolen blankets, women used to wear an apron made of cedar bark and a belt made of the same material. When canoeing or working on the beach, the women wear large water-tight hats made of basketry. In rainy weather a water-tight cape or poncho made of cedar bark, is used.

The women dress their hair in two plaits, while the men wear it comparatively short. The latter keep it back from the face by means of a strap of fur or cloth tied around the head. Ear and nose ornaments are used extensively. They are made of bone and of abalone shell. The women of the most northern tribes (from about Skeena River northward) wear labrets.

A great variety of baskets are used—large wicker baskets for carrying fish and clams, cedar-bark baskets for purposes of storage. Mats made of cedar bark, and in the south such made of rushes, are used for bedding, packing, seats, dishes, covers of boxes, and similar purposes.

In olden times work in wood was done by means of stone and bone implements. Trees were felled with stone axes and split by means of wooden or bone wedges. Boards were split out of cedar trees by means of these wedges. After the rough cutting was finished, the surface of the wood was planed with adzes, a considerable number of which were made of jade and serpentine bowlders, which materials are found in several rivers. Carvings were executed with stone and shell knives.

Stone mortars and pestles were used for mashing berries. Paint pots of stone, brushes, and stencils made of cedar bark formed the outfit of the Indian painter. Pipes were made of slate, of bone, or of wood.

Canoes are made of cedar wood. The types of canoes vary somewhat among the different tribes of the coast, depending also largely upon whether the canoe is to be used for hunting, traveling, or fishing. The canoe is propelled and steered by means of paddles.

The houses are made of wood and attain considerable dimensions. The details of construction vary considerably among the various tribes, but the general appearance is much alike from Comox to Alaska, while farther south the square northern house gives way to the long house of the Coast Salish. A detailed description of the house will be given later on.

The tribes comprising the North Pacific group speak a great many different languages. From north to south we find the following linguistic families, which are subdivided in numerous dialects, as follows:

I. Tlingit, inhabitating southern Alaska.

II. Haida, inhabiting Queen Charlotte Islands and part of Prince of Wales Archipelago.

III. Tsimshian, inhabiting Nass and Skeena rivers and the adjacent islands.

1. Nisqa′, on Nass River.
2. Gyitkca′n, on upper Skeena River.
3. Ts'E′mcian, on lower Skeena River and the adjacent islands.

IV. Wakashan, inhabiting the coast from Gardiner Channel to Cape Mudge, the region around Dean Inlet excepted; Vancouver Island, except its southeastern part, from Comox to Sooke Inlet; and Cape Flattery.

A. Kwakiutl group.

1. Xa–îsla, on Gardiner and Douglass channels.
2. Hē′iltsuq, from Gardiner Channel to Rivers Inlet.
3. Kwakiutl, from Rivers Inlet to Cape Mudge.

B. Nootka group, inhabiting the west coast of Vancouver Island and Cape Flattery.

V. Salishan, inhabiting the coast of the mainland and the eastern part of Vancouver Island south of Cape Mudge, the southern part of the interior as far east as the Selkirk Range, and the northern parts of Washington, Idaho, and Montana; also the region of Dean Inlet.

A. The Coast Salish.

1. Bî′lxula, on Dean Inlet and Bentinck Arm.
2. ÇaLō′ltx, at Comox and Toba Inlet, formerly north of Cape Mudge.
3. PE′nLatc, at Comox.
4. Sī′ciaL, on Jervis Inlet.
5. Sqxō′mic, on Howe Sound and Burrard Inlet.
6. Qau′etcin, on Cowichan River and lower Fraser River.

7. Lku'ñgEn, on the southeastern part of Vancouver Island. This dialect is nearly identical with the S'ā'mic, SEmiā'mō, XLu'mi, and La'lam, the last of which is spoken south of Fuca Strait, while the others are spoken east of the Gulf of Georgia.
8. Nsqoa'li and affiliated dialects of Puget Sound.
9. Twā'nuX, at Union City, Puget Sound.
10. Sqau'elitsk, on Cowlitz River.
11. Sā'tsEpc, on Chehalis River.
12. Tsxē'lîs, on Greys Harbor.
13. Kwī'naiuL, north of Greys Harbor.
14. T'ilē'mukc, south of the mouth of Columbia River.

B. Salishan languages of the interior.

1. NLak·ā'pamuX, on the canyon of Fraser River and the lower course of Thompson River.
2. SLā'LiumX, on Douglas and Lillooet lakes.
3. SExuā'pamuX, from Ashcroft to the northern extremity of Okanagan Lake, the Big Bend of the Columbia, and Quesnelle.
4. Okinā'qēn, with the closely related Kalispelm, Spokane, Flatheads.

VI. Chemakum, south of Cape Flattery and near Port Townsend.

VII. Chinook, on Columbia River.

Among these languages, Tlingit and Haida on the one hand, Kwakiutl, Salishan, and Chemakum on the other, show certain similarities in form which induce me to consider these groups as more closely related among themselves than to the other languages.

The physical characteristics of the Indians of this region show also that they are by no means a homogeneous people. So far as we know now, we may distinguish four types on the coast of British Columbia: The northern type, embracing the Nisqa' and Tsimshian; the Kwakiutl type; that of Harrison Lake; and the Salish of the interior, as represented by the Okanagan, Flathead, and Shuswap. The following measurements show the differences of types:

	Northern type.	Kwakiutl.	Harrison Lake.	Salish of the interior.
	mm.	*mm.*	*mm.*	*mm.*
Stature	1,670	1,644	1,580	1,679
Index of height, sitting	53.7	54.9	53.1	52.9
Length of head	195.5	(196)	183	191.8
Breadth of head	161.5	(161)	164.5	160.7
Height of face	120.5	129.1	115.5	123
Breadth of face	156.5	150.4	151.5	149.2
Height of nose	50.8	55.7	52.8	55.6
Breadth of nose	40.1	39.3	37.5	40.8
Length-breadth index	83.5	83.8	88.8	83.4
Facial index	77	86.7	76.2	83.6
Nasal index	79.5	71.6	72	74

The types expressed by these figures may be described as follows: The northern Indians are of medium stature. Their arms are relatively long, their bodies short. The head is very large, particularly its transversal diameter. The same may be said of the face, the breadth of which is enormous, as it exceeds the average breadth of face of the North American Indian by 6 mm. The height of the face is moderate; therefore its form appears decidedly low. The nose is very low as compared to the height of the face, and at the same time broad. Its elevation over the face is also very slight only. The bridge is generally concave, and very flat between the eyes.

The Kwakiutl are somewhat shorter, the trunks of their bodies are relatively longer, their arms and legs shorter than those of the first group. The dimensions of the head are very nearly the same, but the face shows a remarkably different type, which distinguishes it fundamentally from the faces of all the other groups. The breadth of the face exceeds only slightly the average breadth of face of the Indian, but its height is enormous. The same may be said of the nose, which is very high and relatively narrow. Its elevation is also very great. The nasal bones are strongly developed and form a steep arch, their lower end rising high above the face. This causes a very strongly hooked nose to be found frequently among the Kwakiutl, which type of nose is almost absent in all other parts of the Pacific Coast. This feature is so strongly marked that individuals of this group may be recognized with a considerable degree of certainty by the form of the face and of the nose alone.

The Harrison Lake type has a very short stature. The head is exceedingly short and broad, surpassing in this respect all other forms known to exist in North America. The face is not very wide, but very low, thus producing a chamæprosopic form, the proportions of which resemble those of the Nass River face, while its dimensions are much smaller. In this small face we find a nose which is absolutely higher than that of the Nass River Indian with his huge face. It is, at the same time, rather narrow. The lower portion of the face appears very small, as may be seen by subtracting the height of the nose from that of the face, which gives an approximate measure of the distance from septum to chin.

The Salish of the interior have a stature of 168 cm. Their heads are shorter than those of the tribes of Northern British Columbia or of the Indians of the plains. Their faces have the average height of the Indian face, being higher than that of the northern type of Indians, but lower than that of the Kwakiutl. The nose is high and wide, and has the characteristic Indian form, which is rare in most parts of the coast.

The social organization of the tribes of the coast shows considerable variation. The tribes of the northern parts of the coast have a maternal organization, while those in the south are purely paternally organized. The central tribes, particularly the Kwakiutl, show a peculiar transitional stage.

The Tlingit, Haida, Tsimshian, and Hēiltsuq have animal totems. The first of these have two phratries, the raven and wolf among the Tlingit, raven (Q'oa'la) and eagle (G·ītɛna') among the Haida. The Tsimshian have four totems—raven (Qanha'da), eagle (Laxskīyek), wolf (Laxk·ebō'), and bear (G·ispawaduwɛ'da); the Hēiltsuq three—raven (Qō'ix·tēnôx), eagle (Wī'k'oaqx·tēnôx), and killer whale (Ha'lx'-aix·tēnôx); the Xa-isla' six—beaver, eagle, wolf, salmon, raven, killer whale. Animal totems in the proper sense of this term are confined to these five groups or tribes. They are not found among the Kwakiutl, although they belong to the same linguistic stock to which the Xa-isla and Hēiltsuq belong. The clans of the northern tribes bear the names of their respective totems and are exogamous.

It must be clearly understood, however, that the natives do not consider themselves descendants of the totem. All my endeavors to obtain information regarding the supposed origin of the relation between man and animal have invariably led to the telling of a myth, in which it is stated how a certain ancestor of the clan in question obtained his totem. The character of these legends is uniform among all the peoples of this region; even farther south, among the Kwakiutl and the northern tribes of the Coast Salish, who have no animal totem in the restricted sense of this term. The ideas of the Kwakiutl regarding these matters will be described fully later on. As these legends reveal the fundamental views the natives hold in regard to their totem, I shall give abstracts of a few of them.

The following is a legend of the Tsimshian:

The Bear Clan.—An Indian went mountain-goat hunting. When he had reached a remote mountain range, he met a black bear, who took him to his home, taught him how to catch salmon, and how to build canoes. For two years the man stayed with the bear; then he returned to his own village. The people were afraid of him, because he looked just like a bear. One man, however, caught him and took him home. He could not speak and could not eat anything but raw food. Then they rubbed him with magic herbs, and gradually he was retransformed into the shape of a man. After this, whenever he was in want, he called his friend the bear, who came to assist him. In winter when the rivers were frozen, he alone was able to catch salmon. He built a house and painted the bear on the house front. His sister made a dancing blanket, the design of which represented a bear. Therefore the descendants of his sisters use the bear for their crest.

It is evident that legends of this character correspond almost exactly to the tales of the acquisition of manitows among the Eastern Indians, and they are evidence that the totem of this group of tribes is, in the main, the hereditary manitow of a family. This analogy becomes still clearer when we consider that each man among these tribes acquires a guardian spirit, but that he can acquire only such as belong to his clan. Thus, a person may have the general crest of his clan and, besides, use as his personal crest such guardian spirits as he has acquired. This accounts partly for the great multiplicity of combinations of crests which we observe on the carvings of these people.

The more general the use of the crest in the whole clan, the remoter the time to which the clan legend is ascribed. In many cases the incidents are considered comparatively recent, and are then confined to the descendants of the person whom the legend concerns. The extreme case is the narrative of acquisition of one of the crests of the clan by a single person.

These ideas necessitate that we find the clans or phratries subdivided and that there exists a multiplicity of crests for each phratry. As an illustration of this phenomenon, I will give a list of the crests and clans of the Stikine tribe of the Tlingit:

Crests of the raven phratry: Raven, frog, goose, sea lion, owl, salmon, beaver, codfish, skate.

Crests of the wolf phratry: Wolf, bear, eagle, killer whale, shark, auk, gull, sparrow hawk, thunder bird.

The phratries of the Stikine tribes are subdivided as follows:

Families of the raven phratry:

Qasx'aguē'dē. Crest: Raven.

K·iks'a'dē. Crest: Frog.

Qatc'a'dē. Crest: Raven.

Tīr hit tān (=bark house clan). Crest: Beaver.

DēLqoē'dē (=people of the point). Crest: Raven.

Qagan hit tan (=sun house clan). Crest: Raven.

xēLqoan. Crest: Beaver.

Families of the wolf phratry:

Nanaā'ri or siknax'a'dē (corresponding to the Kagontā'n of other Tlingit tribes), subdivided as follows:

Harā'c hit tan (=porch house clan).

Tos hit tan (=shark house clan).

Q'ēt gō hit tan.

xūts hit tan (=bear house clan).

Xōqē'dē. Crest: Killer whale.

The list is probably not complete, but it shows the character of these subdivisions. Similar subdivisions, although less numerous, are found among the Tsimshian.

The crest is used for ornamenting objects belonging to a member of the clan; they are carved on columns intended to perpetuate the memory of a deceased relative, painted on the house front or carved on a column which is placed in front of the house, and are also shown as masks in festivals of the clan. It is impossible to draw a sharp line between the pure crest and figures or masks illustrating certain incidents in the legendary history of the clan. In order to illustrate this point, which is of great importance in the study of our subject, I will describe a few examples observed among the Nîsqa' Indians.

The G·ispawaduwE'da, the bear clan of the Nîsqa', use a headdress representing the owl (māskutgunu'ks) (Plate 1), surrounded by many small human heads called gyad Em Laqs (claw men). This is worn in potlaches, and commemorates the following tradition:

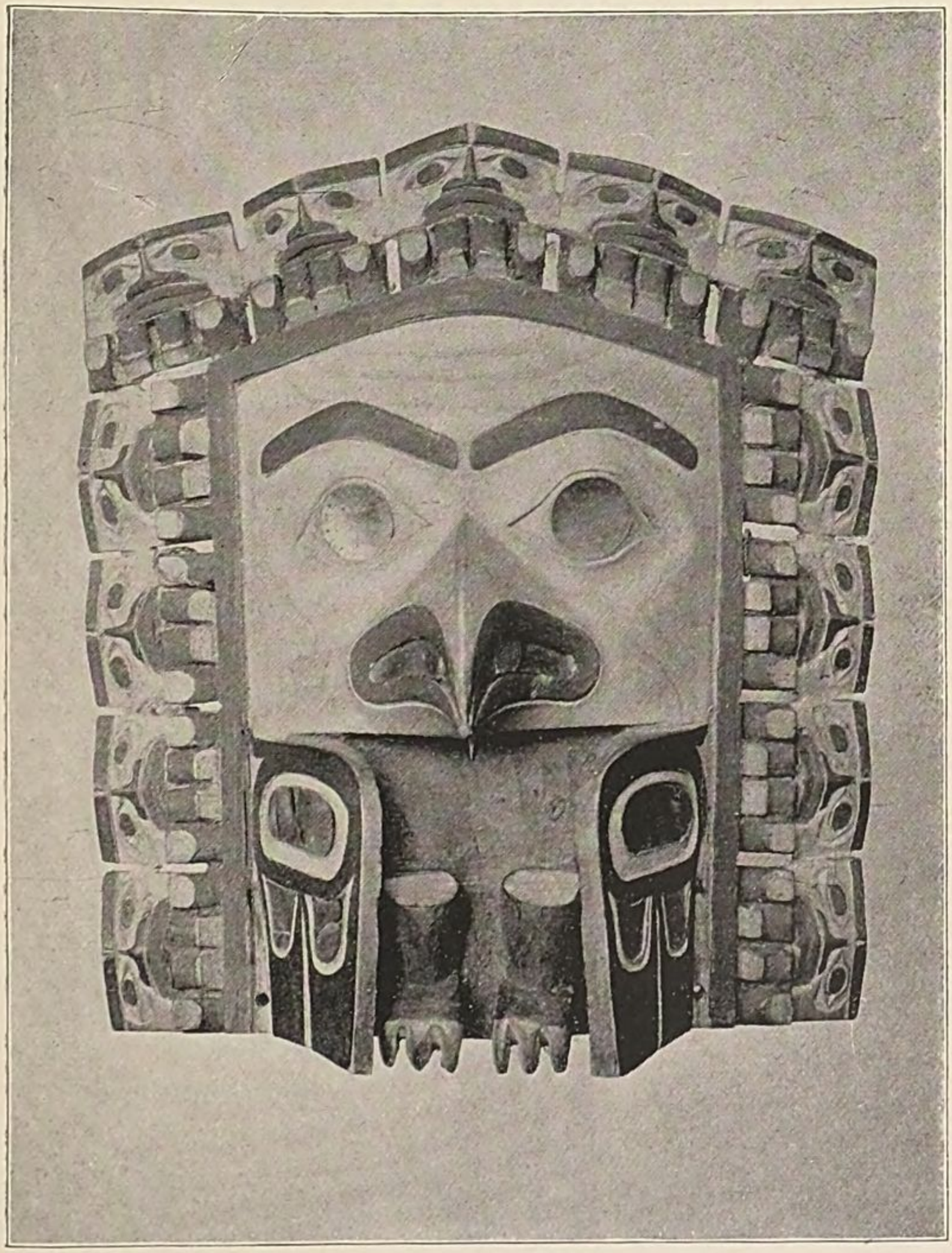
A chief at T'Emlax'ā'mt had a son who was crying all the time. His father became impatient and sent him out of the house, saying, "The

EXPLANATION OF PLATE 1.

NISQÁ HEADDRESS REPRESENTING THE WHITE OWL.

The headdress is made of maple; eyes, tongue, eye ornament on wings, and ornament at base of the wing feathers inlaid in Haliotis shell. Wings and eyebrows of owl, and eyebrows, eyes, and noses of the surrounding men painted black; margin of beak and body of the owl except knees and talons, mouths, arms, and legs of the surrounding men, and the broad band surrounding the owl's body painted red. $6\frac{1}{4}$ inches wide, $7\frac{1}{2}$ inches high. Collected by Franz Boas.

($\frac{16}{9067}$ American Museum of Natural History, New York.)



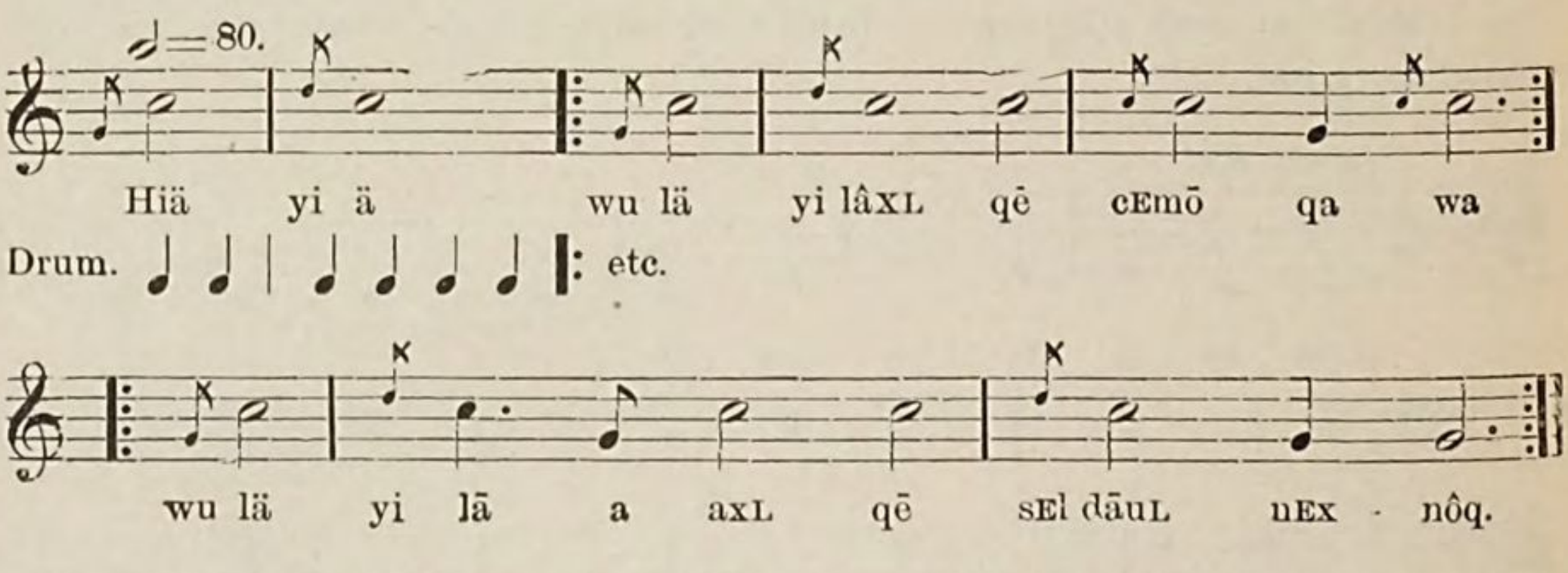
NISQA' HEADDRESS REPRESENTING THE WHITE OWL.

white owl shall fetch you." The boy went out, accompanied by his sister. Then the owl came and carried the girl to the top of a tree. The people heard her crying, and tried to take her down; but they were unable to climb the tree. After a while she ceased to cry, and married the owl. They had a son. When he grew up, she told her husband that she desired to send her son home. Then the owl made a song for him. His mother told him to carve a headdress in the shape of an owl for use in his dance, and to sing the song which his father had made for him. She bade him farewell, telling him that her husband—the owl—was about to carry her to a far-off country. The owl carried both of them to the old chief's house. When the wife of the latter saw the unknown boy, she was afraid; but her daughter reassured her, and told her that the boy was her grandson. Then the old woman took him into her house, while the owl and the boy's mother disappeared. When the boy was grown up, his mother's brother gave a festival, and before presents were distributed among the guests the boy danced, wearing the owl headdress and singing the following song which his father had composed for him:

I. e. O my brother! this white owl has given me this tree for my seat.

When the G·itx·q'adô'q branch of the Qanha'da have a festival, three masks make their appearance, one of which has a mustache and represents a young man named G·itgoô'yim (Plate 2, upper figure), while the other two are called Cā'câ (Plate 2, lower figures). They represent the following tradition:

While the people were staying at the fishing village Gulg·ē'uL, the boys, under the leadership of a young man named G·itgoô'yim, made a small house in the woods behind the town. They took a spring salmon along and played with it until it was rotten. They caught small fish in the creek and split and dried them. They made small drums and began to sing and to dance. For four days they stayed there, dancing all the time. Then they became supernatural beings. G·itgoô'yim's hair had turned into crystal and copper. The people were about to move to another camp and went to fetch the boys, whom they heard singing:



That is: Where the copper hair, where the ice hair is spread out, is the supernatural being.

As soon as the people approached them they disappeared and were seen at once dancing and singing at a distant place. The people were unable to reach them. Then they returned, and since that time the G·itx·q'adô'q have used the song and dance of these boys.

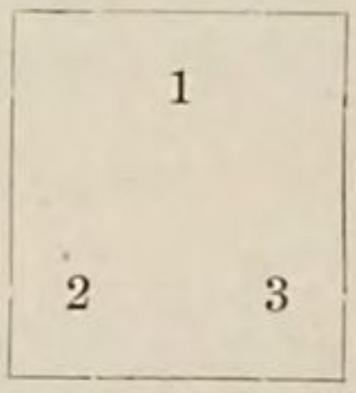
As an example of the use of the crest, viz., of the legend of the clans in the erection of memorial columns, I will give the following: A man had the squid for his protector. After his death his son gave a festival, in the course of which the ground opened and a huge rock which was covered with kelp came up. This was made of wood and of bark. A cave was under the rock and a large squid came out of it. It was made of cedar bark and its arms were set with hooks which caught the blankets of the audience and tore them. The song of the squid was sung by women who were sitting on three platforms in the rear of the house:

Qagaba'xskE laxha' hâyâi, qagaba'xskE laxha' hâyâi.
It shakes the heaven hâyâi, it shakes the heaven hâyâi.

NLqak·sL qâ'dik·sL wī' naxnô'q lōg·ig·a'dEL ts'ā'g·aL ak·s
For the first time comes the great supernatural being in living inside the water

dEm în lîsā'yìlL am g·ig·a't.
to look at the people.

EXPLANATION OF PLATE 2.

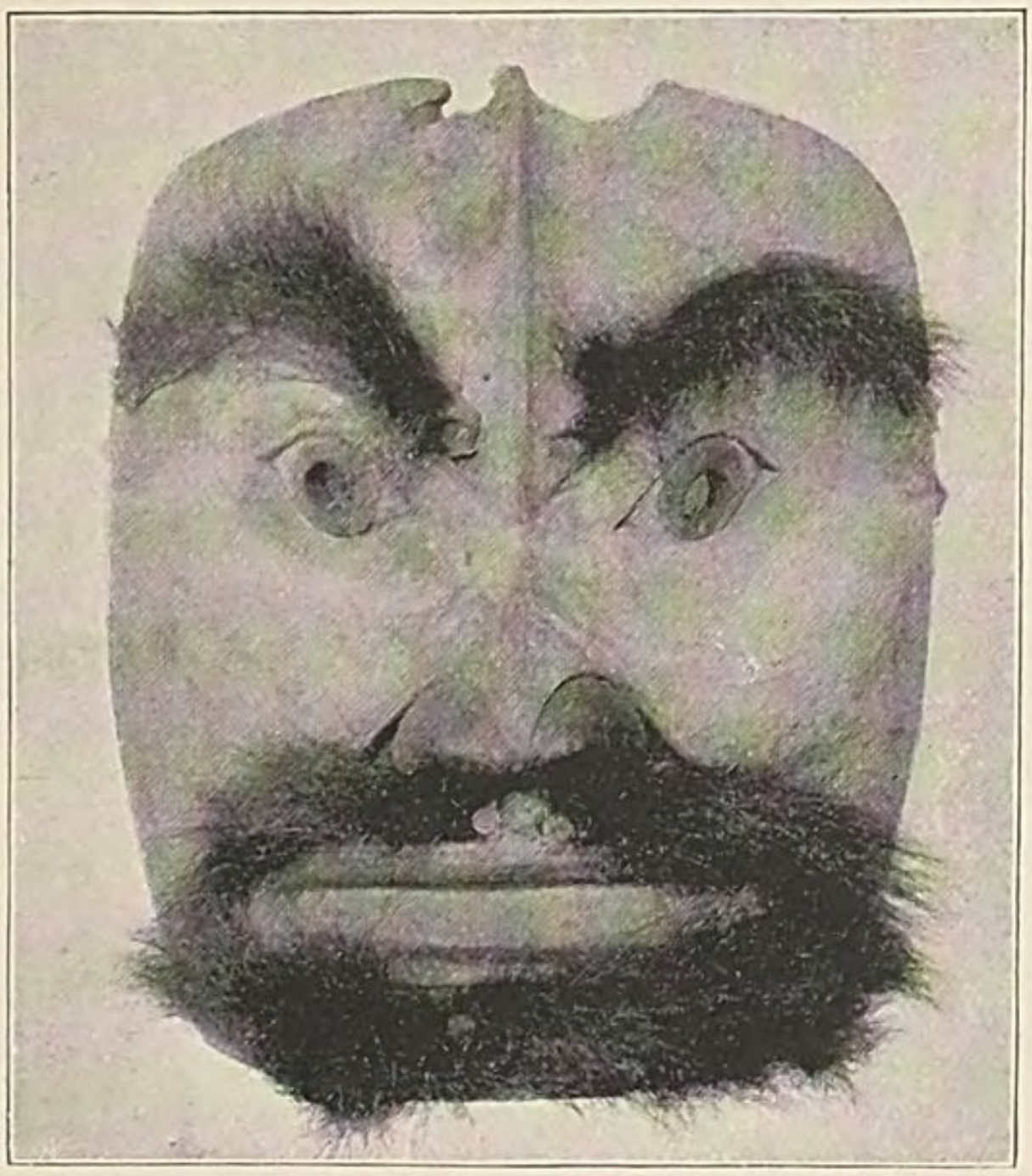


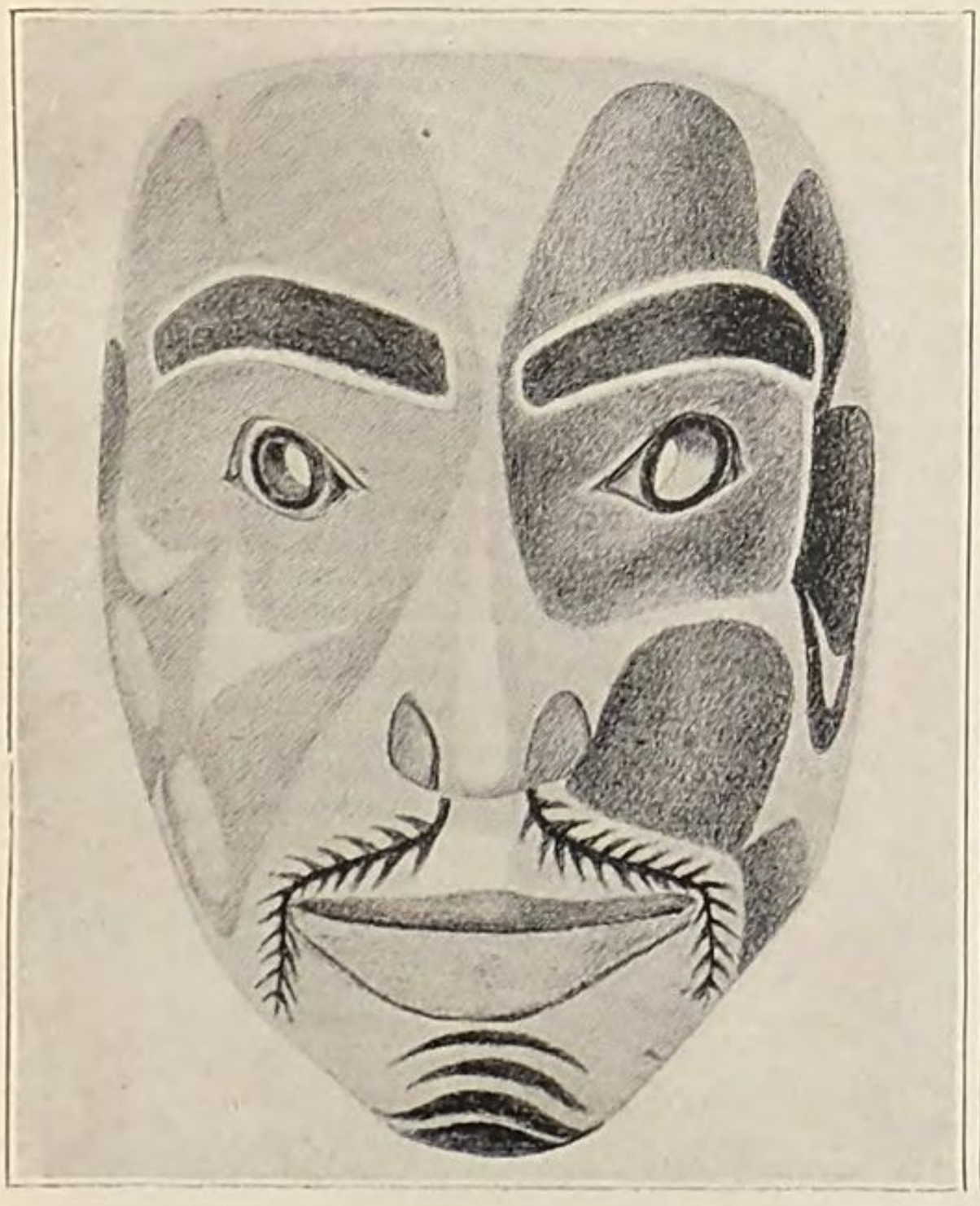
MASKS OF THE CLAN QANHA'DA.

Fig. 1. GITGOÔ'YIM. Height, 9 inches; lips and nose red; face not painted.
(Cat. No. $\frac{16}{9064}$, American Museum of Natural History, New York.)

Fig. 2. CĀ'CÂ. Height, $7\frac{3}{4}$ inches; red, blue, and black.
(Cat. No. $\frac{16}{9065}$, American Museum of Natural History, New York.)

Fig. 3. CĀ'CÂ. Height, $7\frac{3}{4}$ inches; black and red.
(Cat. No. $\frac{16}{9066}$, American Museum of Natural History, New York.)





MASKS OF THE CLAN QANHA'DA, NISQA'.

After the squid and the rock had disappeared again, a man wearing the sun mask appeared in the door, and when the people began to sing his song, a movable sun which was attached to the mask began to turn. The sun belongs to the G·ispawaduwE′da; the squid commemorates the misfortunes of one of the ancestors of the deceased, who, when hunting squids at ebb tide, was captured by a huge animal. His friends tried to liberate him, but were unable to do so. When the water began to rise, they pulled a bag of sea-lion guts over his head, hoping that the air in it might enable him to survive, but when they looked for him at the next tide they found him dead.

After the festival a memorial column was erected. It represented, from below upward, first four men called Lōayō′qs, or the commanders. These are a crest of the G·ispawaduwE′da. Tradition says that one night some men for some purpose dug a hole behind a house near a grave tree. They saw an opening in the woods and a fire in the middle of it, around which ghosts were dancing. They were sitting there as though they were in a house, but the men saw only a pole where the door of the house would have been. Four men called Lōayō′qs were standing at the door, and called to them nagwī′t! (to this side). Since that time the G·ispawaduwE′da have used these figures.

On top of the four men was the sea bear (mEdī′ek Em ak·s) with three fins on its back. Each fin has a human face at its base. The tradition of the sea bear tells how four brothers went down Skeena River and were taken to the bottom of the sea by Hagulâ′q, a sea monster, over whose house they had anchored. His house had a number of platforms. Inside were the killer whales, Hagulâ′q's men. He had four kettles called Lukewarm, Warm, Hot, Boiling, and a hat in the shape of a sea monster, with a number of rings on top. The name of his house was Helahā′idEq (near the Haida country). He gave the brothers the right to use all these objects and with them their songs, which are sung at all the great ceremonies of the clan. The song of the house is as follows:

That is: My friend, walk close to the country of the Haida, the great Hagulâ′q.

Hagulâ′q also gave them two cradle songs, which are sung for the children of the clan, and also at funerals:

ALgwa′sEm gunā′t, aLgwa′sEm gunā′t, aLgwa′sEm gunā′t.
O real strong friend, O real strong friend, O real strong friend.

MaâXLuwîlwetk^{u}L Lgōk·camxk^{u} Lguts'ālt Lguyō′haq'alā′X yaꞩabā′t.
Where he came from with his little black little face with his little club running down.

And the other one:

Gunâ′dēt, gunâ′dēt, gunâ′dēt, gunâ′dēt.
O friend, O friend, O friend, O friend.

Wulnîx·nô′ôLē, sEmLiâ′n, hanxsā′nō, hang·â′ôksgō.
They are very white the real elks, which he won gambling which he found when they drifted down to him.

II. The Social Organization of the Kwakiutl.

The Kwakiutl are divided into a great many tribes, which are in their turn subdivided into septs and clans. Each clan of the Kwakiutl proper derives its origin from a mythical ancestor who descended from heaven, arose from the under world, or emerged from out of the ocean. Their crests and privileges, which will be discussed later on, are based upon the adventures of their ancestors, from whom they are supposed to have descended.

First of all, I will give a list of the tribes and their subdivisions:

A. XA-ISLA′ DIALECT.

1. Xa-isla′.
   Clans: Beaver, eagle, wolf, salmon, raven, killer whale.
2. Xanā′ks'iala, called by the Hē′iltsuq Gī′manoîtx.

B. HĒ′ILTSUQ DIALECT.

1. Xā′exaês. Chinaman hat.
2. Hē′iltsuq. Bellabella.
   Septs: a. Q'ō′qa-îtx. b. Oē′Lîtx. c. Ō′ealîtx.
   Clans: 1. Wī′k'ōxtēnôx, eagle. 2. Q'oē′tēnôx, raven. 3. Ha′lx'aix·tēnôx, killer whale.
3. Sō′mexulîtx. Upper end of Awī′k·'ēnôx Lake.
   Clans: 1. Sō′mexulîtx. 2. Ts'ē′okuimîX or Ts'ē′uîtx.
4. Nō′xunts'îtx. Lower end of Awī′k·'ēnôx Lake.
5. Awī′k·'ēnôx. Rivers Inlet.
   Clans: 1. Qoī′k·axtēnôx, whale. 2. G·ī′g·îlqam. 3. Waō′kuitEm. 4. Wā′wik·em. 5. Guē′tEla. 6. Nā′lekuîtx.

C. KWAKIUTL DIALECT.

a. Koskimo Subdialect.

1. L'ā'sq'ēnôx (=people of the ocean.) Klaskino Inlet.
   Clans: 1. Pē'pawiLēnôx (=the flyers).
   2. T'ē't'anēLēnôx.
   3. O'manits'ēnôx (=the people of Ō'manis, a place on Klaskino Inlet).
2. Gua'ts'ēnôx (=people of the North country). Northern side of entrance to Quatsino Sound.
   Clans: 1. Xâmanâô.
   2. Gua'ts'ēnôx.
3. G·ō'p'ēnôx. Entrance of Quatsino Sound.
   Clans: 1. G·ō'p'ēnôx.
   2. Q'ō'Lēnôx.
4. Qō'sqēmox. Koskimo.
   Clans: 1. G·ē'xsEm (=chiefs).
   2. Naê'nsx·a (=dirty teeth).
   3. G·ē'xsEms'anaL (=highest chiefs).
   4. Tsē'tsaa.
   5. Wōxuā'mîs.
   6. G·ēq'ō'lEqoa.
   7. Kwākūqemāl'ēnôx.

b. Newettee Subdialect.

1. Naqô'mg·ilisala (=always staying in their country). Cape Scott.
   Clans: 1. G·ē'xsEm (=chiefs).
   2. Naê'nsx·a (=dirty teeth).
2. La'Lasiqoala (=those on the ocean). Newettee.
   Clans: 1. G·ī'g·îlqam (=those who receive first).
   2. Lā'lāuiLEla (=always crossing the sea).
   3. G·ē'xsEm (=chiefs).

c. Kwakiutl Subdialect.

The tribes speaking this dialect call themselves Kwā'kuak·êwak^{u}. Slight variations of dialect are found among the different tribes of this group.

1. Goasi'la (=north people). Smith Inlet.
   Clans: 1. G·ī'g·îlqam (=those who receive first).
   2. Sī'sînLaē (=the Sî'nLaēs).
   3. Q'ō'mk·ūtîs (=the rich side).
2. Nā'q'oaqtôq. Seymour Inlet.
   Clans: 1. G·ē'xsEm (=chiefs).
   2. Sī'sînLaē (=the Sî'nLaēs).
   3. Tsītsîmē'lEqala (=the Tsîmē'lEqalas).
   4. Wā'las (=the great ones).

2. Nā′q'oaqtôq. Seymour Inlet—Continued.
Clans: 5. TE′mLTEmLĖls (=those under whom the ground shakes).
6. Kwā′kōk·ūL (=the Kwakiutl).
3. Kwakiutl (=smoke of the world[1]). Fort Rupert, Turnour Island, Call Creek. This tribe consists of four septs.
3a. Guē′tEla (=northern people) or Kuē′xâmut (=fellows of the Kuē′xa).
Clans: 1. Maa′mtag·ila (=the Ma′tag·ilas).
2. K^{u}kwā′kum (=the real Kwakiutl).
3. G·ē′xsEm (=chiefs).
4. Lā′alaxsEnt'aiō (=the Lā′laxsEnt'aiōs).
5. Sī′sînLaē (=the Sî′nLaēs).
3b. Q'ō′moyuē (the rich ones). War name: Kuē′xa (the murderers).
Clans: 1. K^{u}kwā′kum (=the real Kwakiutl).
2. Hā′anaLēnôx (=the archers).
3. Yaai′x·aqEmaē (=the crabs).
4. Haai′lak·Emaē (=the shamans) or Lâ′xsē (going through).
5. G·ī′g·îlqam (=those who receive first).
3c. Q'ō′mk·ūtis (=the rich side).
3d. Wa′las Kwakiutl (=the great Kwakiutl). Nickname: Lâ′kuilila (=the tramps).
Clans: 1. Ts'E′nts'Enx·qaiō (=the Ts'E′nx·qaiōs).
2. G·ē′xsEm (=chiefs).
3. Wa′ulipoē (=those who are feared).
4. LĒ′q'Em.
5. LĒ′Lqētē (=having a great name).
4. Ma′malēleqala (=Mā′lēleqala people). Village Island.
Clans: 1. TE′mLtEmLEls (=those under whom the ground shakes).
2. Wē′wamasqEm (=the noble ones?).
3. Wā′las (=the great ones).
4. Ma′malēleqam (=the Mā′lēleqalas).
5. Qoē′xsōt'ēnôx (=people of the other side). Gilford Island.
Clans: 1. Naxnā′xula (=rising above other tribes?).
2. Mē′mogg·îns (=having salmon traps).
3. G·ī′gîlqam (=those who receive first).
4. N̨ē′nêlpaē (=those on the upper end of the river).
6. Lau′itsîs (=angry people). Cracroft Island.
Clans: 1. Sī′sînLaē (=the SinLaēs)
2. Nū′nEmasEqâlîs (=old from the beginning).
3. LĒ′Lqēt (=having a great name).
4. G·ī′g·îlqam (=those who receive first).

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[1] This is the etymology given by the Kwakiutl themselves, from goax·i′la, smoke. It seems to me that the derivation from Guak·ūtîs=beach at north side of river, from gua=north, —k·ut=opposite, —is=beach, is more likely.

7. NE′mqic. Nimkish River.
   Clans: 1. TsētsēLoā′laqEmaē (=the famous ones).
   2. LaLElā′min (=the supporters).
   3. G·ī′g·îlqam (=those who receive first).
   4. Sī′sînLaē (=the Sî′nLaēs).
   5. Nē′nêlk·’ēnôx (=people from the head waters of the river).
8. T’Ena′xtax. Knight Inlet.
   Clans: 1. ƓƆ’a′mꞩ’amtElaL (=the ƓƆ’a′mtElaLs).
   2. G·ē′xsEm (=the chiefs).
   3. Qoē′qoaainôx (=people from the river Qoa′is).
   4. Yaai′x·aqEmaE (=the crabs).
   5. P’ē′paLēnôx (=the fliers).
9. A′wa-iLala (=those inside the inlet). Knight Inlet.
   Clans: 1. G·ī′g·îlqam (=those who receive first).
   2. Ts’ō′ts’ēna (=thunder birds).
   3. K·ek·k·’ēnôx.
10. Ts’ā′watEēnôx (=people of the oulachon country). Kingcombe Inlet.
   Clans: 1. Lē′lEwag·ila (=the heaven makers—mythical name of raven).
   2. G·ī′g·EqEmaē (=chiefs).
   3. Wī′oqEmaē (=whom no one dares to look at).
   4. G·āg·g·ilak·a (=always wanting to kill people).
   5. Qā″qawatilik·a (=the Qa′watiliqalas).
11. Guau′aēnôx. Drury Inlet.
   Clans: 1. G·ī′g·îlqam (=those to whom is given first).
   2. Kwī′koaēnôx (=those at the lower end of the village).
   3. Kwā′kōwēnôx.
12. Haxuā′mîs. Wakeman Sound.
   Clans: 1. G·ī′g·îlqam (=those who receive first).
   2. G·ē′xsEm (=the chiefs).
   3. Haai′alik·auaē (=the shamans).
13. Lē′kwîltôq. From Knight Inlet to Bute Inlet and on the opposite part of Vancouver Island. They consist of the following septs:
13a. Wī′wēqaē (=the Wē′qaēs).
   Clans: 1. G·ī′g·îlqam (=those who receive first).
   2. G·ē′xsEm (=the chiefs).
   3. ?
   4. Wī′wēaqam (=the Wē′qaēs).
13b. Xā′xamatsEs (=old mats, so called because slaves of the Wī′wēqaē). Recently they have taken the name of Wā′litsum (=the great ones).
   Clans: ?
13c. Kuē′xa (=the murderers).
   Clans: 1. Wī′wēaqam (=the Wē′qaēs).
   2. Q’ō′moyuē (the rich ones).
   3. Kuē′xa (=the murderers).

13d. Laa′luîs.

13e. Q'ō′m'ēnôx.

This list is not quite complete, but very nearly so. A number of the clans are subdivided into smaller groups, but it is very difficult to ascertain these subdivisions. Thus the Naqô′mg·ilisala embrace a subdivision called Mē′Emaqaua, who are, however, not considered a separate clan. The Lā′la-uiLEla of the La′Lasiqoala are divided into two divisions—the G·'ēg·'ō′tē, the descendants of G·'ō′tē, and the Hä′hêqolaL, the descendants of Hā′qolaL. The Lā′alaxsEnt'aiō of the Kwakiutl proper consist of three divisions: The Lā′alaxsEnt'aiō proper, the A′lk'unwēE (=lower corner, speakers of the first division), and the Hē′ha'mē′tawē, the descendants of Ha'mē′tawē. The Ts'E′nts'Enx·qaio of the Wā′las Kwakiutl are divided in two divisions—the Ts'E′nq'am and Hai′māaxstō. These divisions are given merely as examples, as I have not been able to discover all the subdivisions of the different clans and tribes.

The recent history of these tribes and clans explains the development of this exceedingly complex social system. Historical tradition has it that the Guē′tEla and the Q'ō′moyuē, both septs of the Kwakiutl, not very long ago formed one tribe. At one time a quarrel arose between them, in which Lā′qoag·ila, the head chief of the Guē′tEla, was killed. Then they divided, and since that time form two septs. There is a saying indicating the close relationship of the two, to the effect that the Guē′tEla and the Q'ō′moyuē are twins—the former suckled at the mother's right breast, the latter at the left.

Still another tribe, which, however, I have not included in the above list on account of its recent origin, has branched off from the Kwakiutl. These people call themselves Mā′tîlpē, i. e., the highest Maa′mtag·ila, and include the septs Maa′mtag·ila, G·ē′xsEm, and Haai′lak·Emaē, all of which are found among the Guē′tEla and Q'ō′moyuē.

While in these two cases new tribes were formed by a process of division, in one other case, at least, a tribe has recently become a clan of another tribe, namely, the Laa′luîs of the Lē′kwîltôq, who have joined the Kuē′xa of the same group and form a fourth clan of the latter. The event happened during the great war with the southern Salishan tribes, which was waged in the middle of this century, the cause of the amalgamation being the great reduction of the tribe. The Q'ō′m'ēnôx have become entirely extinct. Another tribe which lived near the Qō′sqēmox, of which, however, we have only traditional reports, the Xoyā′les, have been exterminated by the Qō′sqēmox.

These few authentic facts show that the numbers of tribes and of clans have undergone considerable changes during historical times. This conclusion is corroborated by the distribution of clans among various tribes, and by the meaning of their names. We may distinguish three classes of tribal names and of clan names, viz, such as are collective forms of the name of the ancestor, names taken from the

region inhabited by the tribe or clan, and names of honor. There is a decided tendency to substitute names of the last class for others. Thus the name Q'ō'moyuē (the rich ones) is new. The Xā'xamatsEs took the name Wā'litsum (the great ones) only twenty-five or thirty years ago. I presume that the names G·ī'g·îlqam (those who receive first), G·ē'xsEm (chiefs), TE'mLtEmLEls (those under whom the ground shakes), were adopted in a similar way. Other changes of names occur. Thus the Nimkish call themselves recently LaŌ'koatx, which is the name of one of the tribes of the west coast of Vancouver Island, and the Lau'itsîs are adopting the name Ts'ā'mac, which is the name of the Songish in the Comox dialect.

The geographical names are more suggestive. We find among the Nimkish a clan called Nē'nêlk·'ēnôx, the people from the head waters of Nimkish River. This would seem to indicate that the head waters of the river was their ancient home, and that they have joined the rest of the Nimkish. The same may be said of the Ō'manits'ēnôx clan of the L'ā'sq'ēnôx, the Qoē'qoaainôx of the T'Ena'xtax, and the Nē'nêlpaē of the Qoē'xsōt'ēnôx.

In all cases where the clan name or the tribal name is a collective form of the name of the ancestor, we may assume that the group formed at one time a single community. How this unit may be broken appears in the case of the Mā'tîlpē. We observe that quite a number of such clan names are common to several tribes. Thus the Sī'sînLaē, the descendants of Sî'nLaē, are found among the Goasi'la, Nā'q'oaqtôq, Guē'tEla, Lau'itsîs, and Nimkish. The Yaai'x·aqEmaē, the descendants of Yix·ā'qEmaē, are found among the Q'ō'moyuē and T'Ena'xtax. I believe that in all these cases part of the original clan has drifted away from its original home, keeping its old name. This view is sustained by the tradition that the clans were divided at the time of the great flood, one part drifting here, another there.

Still another case that gives evidence of the gradual development of the present system of clans and tribes is furnished by the Mā'malēleqala and Wī'wēqaē. Both these names are the collective forms of the names of the ancestors. Nevertheless the Ma'malēleqam and Wī'wēaqam, the Mā'lēleqala group, and the Wē'qaē group appear as subdivisions of these tribes. It seems to me that this proves that these subdivisions must have formed the original stock, which the other clans joined in course of time.

All this evidence proves that the present system of tribes and clans is of recent growth and has undergone considerable changes.

The traditions of the clans show clearly what we must consider the original unit of society among the Kwakiutl. Each clan derives its origin from a mythical ancestor, who built his house at a certain place and whose descendants lived at that place. In a great many cases these places prove to be old village sites. In some, large accumulations of shells are found, which show that they have been inhabited through

long periods. We conclude, therefore, that the clan was originally a village community, which, owing to changes in number or for purposes of defense, left their old home and joined some other community, retaining, however, to a certain degree its independence. This corresponds exactly to the social organization of the Salishan tribes of the southern portion of Vancouver Island, and of all the coast tribes of Washington and Oregon. The simple division into village communities which seems to have been the prevalent type of society along a considerable portion of the Pacific Coast has, among the Kwakiutl, undergone such changes that a number of tribes which are divided into clans have originated.

While it would be natural that in the former stage the child should be considered a member of the village community to which his father or mother belonged, we may expect disturbances in the organization which developed among the Kwakiutl. Among the village communities of Oregon, Washington, and southern Vancouver Island the child belongs to the father's village, where the married couple generally live, and it seems that among many of these tribes the villages are exogamic. Among the Kwakiutl the clans are also exogamic, and certain privileges are inherited in the paternal line, while a much larger number are obtained by marriage. The existence of the former class suggests that the organization must have been at one time a purely paternal one. Three causes seem to have disturbed the original organization—the development of the more complex organization mentioned above, the influence of the northern tribes which have a purely maternal organization, and the development of legends referring to the origin of the clans which are analogous to similar traditions of the northern groups of tribes. Taking up the last-named point first, we find that each clan claims a certain rank and certain privileges which are based upon the descent and adventures of its ancestor. These privileges, if originally belonging to a tribe which at one time has been on the paternal stage, would hardly have a tendency to deviate from the law governing this stage. If they have, however, originated under the influence of a people which is on a maternal stage, an abnormal development seems likely. In the north a woman's rank and privileges always descend upon her children. Practically the same result has been brought about among the Kwakiutl, but in a manner which suggests that a people with paternal institutions has adapted its social laws to these customs. Here the woman brings as a dower her father's position and privileges to her husband, who, however, is not allowed to use them himself, but acquires them for the use of his son. As the woman's father, on his part, has acquired his privileges in the same manner through his mother, a purely female law of descent is secured, although only through the medium of the husband. It seems to my mind that this exceedingly intricate law, which will be described in detail in the course of this paper, can not be explained in any other way than as an adaptation of

maternal laws by a tribe which was on a paternal stage. I can not imagine that it is a transition of a maternal society to a paternal society, because there are no relics of the former stage beyond those which we find everywhere, and which do not prove that the transition has been recent at all. There is no trace left of an inheritance from the wife's brothers; the young couple do not live with the wife's parents. But the most important argument is that the customs can not have been prevalent in the village communities from which the present tribal system originated, as in these the tribe is always designated as the direct descendants of the mythical ancestor. If the village communities had been on the maternal stage, the tribes would have been designated as the descendants of the ancestor's sisters, as is always the case in the legends of the northern tribes.

Names and all the privileges connected with them may be obtained, also, by killing the owner of the name, either in war or by murder. The slayer has then the right to put his own successor in the place of his killed enemy. In this manner names and customs have often spread from tribe to tribe.

It remains to substantiate what I have said by telling the legends of a few clans. I shall give a fuller account of these legends later on, while at this place I will merely refer to such passages as are of importance in our present consideration. The clan Ō'manits'ēnôx of the L'ā'sq'ēnôx derive their origin from Ts'ī'lqoalōLEla, the husband of L'ē'sElaqa (=Sun woman). The former came down from heaven while his wife stayed there because she had to attend to the moving sun. He was accompanied by his children Sē'paxaēs (=Shining down), Yā'q'Ent'Emaē (=First speaker), G·ē'xdEn, and Dā'doqanaqēsEla (=Seeing from one corner to the other). From these the clan originated (Appendix p. 665).

The following genealogy of the clan Lā'la-uiLEla of the La'Lasiqoala is a still better example:

NōmasE'nxēlîs (descended from heaven).

LExx·a'lix·ila'yu ♂ — E'k·auayuqoa ♀ — Lō'LEmaqa ♀

Ōmalîxstē ♂ — Wa'lixōna or Tse'sElasō ♂ — Lāsōti'wa'lîs ♂

Wālas NEmō'gwîs ♂ — G·a'lqamîstal ♂ — Hā'taqa ♀

TsEpā'x·ioala ♂, Yā'nEmq'ana ♂, T'koā'yū ♂, Alē'xoatus.

A great number of examples of this kind might be given. It is true that these traditions are probably not very old, and have been modified with the changing social life of the people; but from what we know of the development of myths we should expect to find in them traces, at least, of the old maternal institutions, if they had ever existed. The fact that they invariably and always are explained by genealogies, such as the above, seems to my mind conclusive proof that a paternal organization of the tribe preceded the present one.

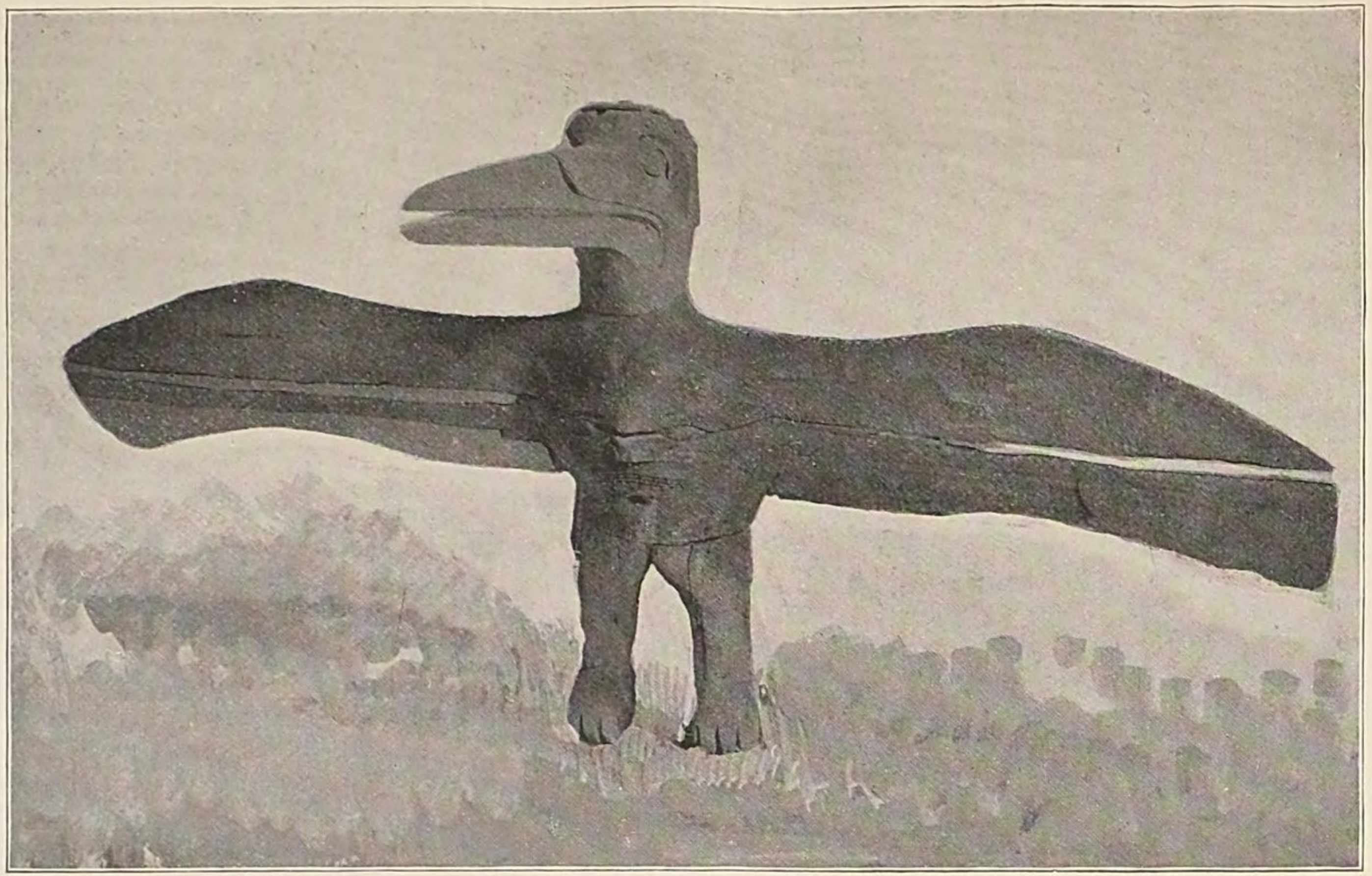
I referred several times above to the fact that the clans have certain rights in which the others do not share. These are mainly the use of certain crests and of semi-religious performances. All of these are acquired by marriage, as described above. In the village communities of the southern tribes we find no trace of a crest, while among the Kwakiutl it is not strictly hereditary, but descends through marriage in the female line, in a similar way as the crest of the northern tribes descends. The legends of the acquisition of the crest are also similar to the northern legends on the same subject, and I conclude, therefore, that the present stage has developed through contact of these two cultural areas. I do not mean to say that the ideas have been bodily borrowed by the Kwakiutl, but that their manifestation in the social organization of the tribe is largely due to suggestion on the part of the northern tribes. The American idea of the acquisition of the manitou was evidently also fundamental among the Kwakiutl, as all their tales refer to it, and, as we shall see later on, the whole winter ceremonial is based on it. But it has assumed a peculiar form in so far as the manitou was acquired by a mythical ancestor and is now handed down from generation to generation, and the connection has in many cases become so slight that the tutelary genius of the clan has degenerated into a crest. This degeneration, together with the descent through marriage, I take to be due to the influence of the northern totemism.

I give a few stories illustrating the acquisition of the crest through the ancestor, which will bring out the close analogy with the acquisition of the manitou, and also show the manner in which the crest is used for adorning persons and utensils.

The legend of the Ō′manits'ēnôx, which I quoted above (Appendix, p.665), goes on to tell how G·ē′xdEn fell in with a number of killer whales, which had assumed the shape of men, and were mending their canoes. Their chief gave him the quartz-pointed whaling harpoon, his names, and the right to use the painting of the killer whale on his house front.

Another good example is the following tradition of the clan Lâ′xsē of the Q'ō′moyuē or Kuē′xa. I give here a translation:

The first Kuē′xa lived at Tsā′Xoyō. Their chief, Yē′iqoLalasamē, went bear hunting up the river of LîXsī′wē until he came to Sā′x·sox·. After he had been away four days, he saw the Hō′Xhôq (a fabulous bird, supposed to be similar to the crane) and heard its cry. It was larger than a man. Then Yē′iqoLalasamē hid. The Hō′Xhôq tried to find him, and finally discovered the place where the chief was in hiding at one side of a cedar tree. It tried to peck him with its beak, but missed him. Yē′iqoLalasamē merely jumped to the other side of the tree, and the Hō′Xhôq could not kill him. He came home at night. Then he carved the crane out of yellow cedar, and now it is the carving of his clan (Plate 3). He invited all the tribes, and gave away cedar-bark blankets, all kinds of skins, canoes, and slaves. Then he placed the image of the Hō′Xhôq on top of a pole outside of his house.



GRAVE MONUMENT REPRESENTING THE HŌ'XHOKᵘ A CREST OF THE CLAN LÂXSE OF THE Q'Ō'MOYNĒ.

This monument is six feet in height and was carved from red cedar bark. On the stomach of the bird is a carving representing a face. Originally the wings were painted in black, representing feathers, but only faint traces of color now remain.

$\frac{16}{9768}$, American Museum of Natural History, New York. Collected by F. Boas.

Later on, a chief of the Qoē′xsot'ēnôx wanted to have the carved Hō′Xhôq. His name was LEk·amā′xōt. He tried to find out how to obtain it, and learned that he had to marry the daughter of Yē′iqo-Lalasamē in order to obtain it. Then he engaged himself to marry Mā′xalayuqoa, that chief's daughter. Yē′iqoLālasamē agreed, and they were married. Still later NEqā′p'Enk·Em, chief of the K"kwā′kum of the Guē′tEla, obtained the Hō′Xhôq from the Qoē′xsōt'enôx by marriage.

The first part of this legend shows again the close analogy to the acquisition of the manitou; the end shows how the privilege of using the carving was acquired, first by one tribe, then by the other.

It is not necessary to multiply these examples. There exists, however, another class of traditions, according to which the crests or emblems of the clan are not acquired in this manner, but brought down by the ancestor of the clan from heaven or from the underworld or out of the ocean, wherever he may have derived his origin. This is the case with the Sī′sînLaē, whose emblem is the sun (fig. 1). Here also belong the numerous tales of ancestors who came down from heaven, took off their masks, and became men, for in all these cases the mask has remained the crest of the clan. To this class belong the traditions of the G·ī′g·îlqam of the Q'ō′moyuē, of the Ts'E′nts'Enx·qaiō, and many others.

There is still another class of privileges connected with these traditions, to which, however, I will only briefly refer at this place, as I have to treat them more fully later on. I mean the membership in secret societies. Many ancestors, when obtaining their manitous, were given the right to perform certain dances, or they were given secret songs, or the power to eat human flesh. These rights have also become hereditary, but they differ from the crest in so far as the character of the initiating spirit (the manitou) has been more clearly preserved. Each individual, who by descent or marriage is entitled to membership in one of the secret societies, must nevertheless, be initiated by its presiding spirit before joining the society.

In all festivals references to these traditions are very frequent, and it is quite necessary to be acquainted with them in order to understand the proceedings and speeches, as will appear in the further progress of this description.

Summing up the preceding considerations, we may say that the Kwakiutl consisted in olden times of a series of village communities among which descent was counted in the paternal line, and the members of each community were considered descendants of one ancestor. These communities combined in groups, but the composing elements of the groups kept a certain degree of independence and continued to be considered as relatives. Each clan, as we may call the composing elements of the tribe, developed a clan tradition, which was founded upon the acquisition of a manitou by the mythical ancestor, the manitou

Fig. 1.

POST OF CLAN SĪ'SÎNLAĒ OF THE NIMKISH AT ALERT BAY.

(*a*) The post represents the sun surmounting the speaker of the clan. The upper part is carved in the shape of two coppers,[1] the lower one being painted with the design of a bear. The lower portion of the pole has a rectangular cross-section, and is painted with figures representing coppers.

(*b*) Side view of sun mask on top of pole.

From a sketch made by the author, December, 1886.

becoming hereditary in the clan. Owing to the influence of the northern tribes, this manitou became attenuated to a crest, which, in consequence of the same influence, no longer descends in the male line, but may be given in marriage, so that it descends upon the daughter's children.

So far we have considered the clan as a unit. The individuals composing the clan do not form, however, a homogeneous mass, but differ in rank. All the tribes of the Pacific Coast are divided into a nobility, common people, and slaves. The last of these may be left out of consideration, as they do not form part and parcel of the clan, but are captives made in war, or purchases, and may change ownership as any other piece of property. The clan of the Kwakiutl is so organized that a certain limited number of families are recognized. The ancestor of each of these families has a tradition of his own aside from the general clan tradition, and, owing to the possession of the tradition, which almost always concerns the acquisition of a manitou, he has certain crests and privileges of his own. This tradition and the crests and privileges connected with it descended, together with the name of the ancestor, upon his direct descendants in the male line, or, as indicated above, through marriage of his daughter, upon his son-in-law, and through him upon his grandchildren. But there is only one man at a time who personates the ancestor and who, consequently, has his rank and privileges. The individuals personating the ancestors form the nobility of

[1] See page 344.

the tribe. The number of noblemen is therefore fixed. They are not equal in rank, but range in the manner in which their ancestors were supposed to range. At all festivals they sit in the order of their rank, which is therefore called the "seat" of the person (ɬā'qoē). The legend says that the order of seats was given by the deity at a festival of the tribes, at the time when animals were still able to speak. The noblest clan, and among them the noblest name, is called the "eagle" (kuē'kᵘ) of the tribe. In order to show the complexity of this system, I give a list of the nobility of one tribe:

TRIBE, MA'MALĒLEQALA.

I. KUĒ'KU.

1. Lāsōti'walîs.
2. Ō'ts'ēstālîs (creating trouble all around).
3. Anxwē't.
4. Nemōqulag·ilîsts'ē (the great one always alone on world).
5. Lālak·uts'ats'ē.
6. Nenāmbaʒō.

II. TE'MLTEMLELS.

1. Mō'p'Enqam (four fathom face).
2. Kwā'x·sē'stala (having smoke all around).
3. Amā'XulaL (making potlatch dances all the time).
4. ɬā'qoats'ē (great copper).
5. Yā'qōLasEmaē (from whom property comes.
6. Wā'k·as.
7. Yāqōlas (giving wealth).
8. G·ēxsîstalîsamē.
9. Ha'mts'idē (giving food).
10. L'ā'lisk·as'ō (real whale standing on beach).
11. MāXualag·ilîs (giving potlatch everywhere).
12. Kwā'ilaskEn.
13. Tsîx·wī'dē.
14. Sē'wit'ē (to whom people paddle).
15. Yā'qaL'Enala (whose body is all wealth).
16. Qu'mx·ilag·ilīs (always rolling down).
17. Hē'maskEn.
18. Dā'dants'idē.
19. Yā'qustūlag·ilîs.
20. Yā'yagilîs.
21. Mā'las.
22. G·'ō'tē.
23. Ā'lak·ila.
24. Qoayō'LElas.
25. Mā'Xua.
26. NEg·ē'ts'ē (great mountain).
27. Malē'ts'as.
28. Hanā'yus.
29. Ō'la Nemō'gwîs (the great only one).
30. Wā'xawīda ɬEmē.
31. Nanambango.
32. Ē'wanuX.

III. WĒ'WAMASQEM.

1. Sē'wit'ē (to whom people paddle).
2. Wā'gidîs [great (whale) lying on ground].
3. Mā'Xuayalits'ē.
4. Kamʒidē.
5. Xō'samda'as.
6. ɬāqoamut (piece of copper).
7. G·'ō'tē (throwing away property).
8. WīLtsistala.
9. NEnō'laʒamē (fool's face).
10. Wā'Lowê't'ē (from whom presents are expected).
11. Mā'Xuayālîs.
12. Yēqōk'na'lag·ilîs (about whose property people talk).
13. L'ā'qoats'ē (great copper).
14. Hēwasa.
15. Yāxyiqas (whose property is eaten in feasts).
16. Hā'yukwîs.
17. NEmōgwîsts'ē (the great only one).
18. Wī'ts'ēkwā'lasu.
19. Wā''mîs (catching salmon).
20. Xōsamda'as.
21. Mā'Xuayālîs.

IV. WĀ′LAS.

1. Xē′xana-us.
2. Ł̣agesāwā.
3. G·ē′xk·ints'ē (too great a chief).
4. A'mawiyus (always giving potlatch).
5. Wā′las Kwā′x·ilanōkumē.
6. ɬā′qoalaL (copper dance).
7. LĀ′GŌLas (from whom coppers are obtained).
8. Hai′aLqEn.
9. Q'u′mx·ilag·ilîs (always rolling down).
10. Ha′mts'idē (giving food).
11. PōtLidē (satiating).
12. Qamqolag·alitsū.
13. K'oā′maxā'las (around whom people sit).
14. Hē′nak·alasō (envied).
15. LālakEnƧamē.
16. Tsōx·tsa-ēsaqamē.
17. Sē′wit'ē (to whom people paddle).
18. Ꝑā′Ƨuyalakwam.
19. PE′nqoēt'ē (giving soft food).
20. Ha′mts'idē (giving food).
21. LĀ′qoag·ila (copper maker).
22. Sē′saxolas.
23. Hâ′misElaL (dance of receiving presents).
24. Ts'ā′qalaL (dance of throwing away property).
25. Ts'ō′x·ts'aēsaqamē.
26. LĀ′bidē.
27. Xō′samda'as.
28. Sē′wit'ē (to whom people paddle).
29. Mō′nakula (loaded canoe moving).
30. Wā′las (the great one).
31. Qoayî′mts'ē (the great whale).
32. Hē′nak·alasō (envied).
33. Hā′yugwîs.
34. Tsā′xtsaXualîs.
35. Q'ō′mk·Enîs (too rich).
36. G·'ē′g·'EsLen.
37. Ꝑayusdês.
38. G·ēsōyakalîs.
39. Yā′qōLas (giving wealth).
40. Ōwōgwēla.
41. Mōp'Enqam (four fathom face).
42. WāLâlas (around whom people assemble).

V. MA′MALĒLEQAM.

1. Wā′'mîs (catching salmon).
2. ꝐaƧuyalakwam.
3. Sē′saxolas.
4. Ꝑōdalag·ilîs.
5. Kwā′usdēts'as.
6. Mā′Xuag·ila (giving potlatch).
7. Yā′qaL'Enala (whose body is all wealth).
8. K'oā′maxā'las (around whom people sit).
9. G·ēx·Lalats'ē.
10. Yā′qaL'Enala (whose body is all wealth).
11. YēqōLēqalas (from whom presents are expected).
12. LE′lak·inîs (rising too high).
13. Mā′Xmawisaqamē (always giving blankets away while walking).
14. Lalbax·salag·ilîs.
15. Amā′XulaL (potlatch dance).
16. Mā′Xuag·ilîs.
17. LāsutI′walîs.
18. Nē′naguasEmē.
19. X·ā′x·alquts'a.
20. L'ā′qōatsēandG·ī′g·idē(greatcopper).
21. Lā′kanx·īdē.
22. Ꝑōdalag·ilîs.
23. G·ī′qamē (chief).
24. Lā′g·us.
25. La′lbax·salag·ilîs.
26. Bā′salaL.
27. Yā′qaL'Enala (whose body is all wealth).
28. G·ē′xk·in (too great a chief).
29. Pō′tLidē (satiating).
30. Awā′lask·ênîs (getting to great).

These names are acquired by different individuals, but they are not necessarily retained through life, as with a new marriage a new name may be obtained from the new wife's father. The series is not beyond all doubt, since in many instances the Indians are not now-a-days quite certain as to the order of names. This is due to the fact that there are not enough individuals in the tribes to occupy all these places.

III. The Potlatch.

Before proceeding any further it will be necessary to describe the method of acquiring rank. This is done by means of the potlatch, or the distribution of property. This custom has been described often, but it has been thoroughly misunderstood by most observers. The underlying principle is that of the interest-bearing investment of property.

The child when born is given the name of the place where it is born. This name (g·i′nLaxLē) it keeps until about a year old. Then his father, mother, or some other relative, gives a paddle or a mat to each member of the clan and the child receives his second name (nā′map'axLēya). When the boy is about 10 or 12 years old, he obtains his third name (ƧōmiatsExLä′yē). In order to obtain it, he must distribute a number of small presents, such as shirts or single blankets, among his own clan or tribe. When the youth thus starts out in life, he is liberally assisted by his elders, particularly by the nobility of the tribe.

I must say here that the unit of value is the single blanket, now-a-days a cheap white woolen blanket, which is valued at 50 cents. The double blanket is valued at three single blankets. These blankets form the means of exchange of the Indians, and everything is paid for in blankets or in objects the value of which is measured by blankets. When a native has to pay debts and has not a sufficient number of blankets, he borrows them from his friends and has to pay the following rates of interest:

For a period of a few months, for 5 borrowed blankets 6 must be returned (Lē′k·ō); for a period of six months, for 5 borrowed blankets 7 must be returned (mā″Laxsa Lē′k·ōyō); for a period of twelve months or longer, for 5 borrowed blankets 10 must be returned (dē′ida or g·ē′La).

When a person has a poor credit, he may pawn his name for a year. Then the name must not be used during that period, and for 30 blankets which he has borrowed he must pay 100 in order to redeem his name. This is called q'ā′q'oaxō (selling a slave).

The rate of interest of the Lē′k·ō varies somewhat around 25 per cent, according to the kindness of the loaner and the credit of the borrower. For a very short time blankets may be loaned without interest. This is designated by the same term.

When the boy is about to take his third name, he will borrow blankets from the other members of the tribe, who all assist him. He must repay them after a year, or later, with 100 per cent interest. Thus he may have gathered 100 blankets. In June, the time set for this act, the boy will distribute these blankets among his own tribe, giving proportionately to every member of the tribe, but a few more to the chief. This is called Lā′X'uit. When after this time any member of the tribe distributes blankets, the boy receives treble the amount he has given. The people make it a point to repay him inside of a month.

Thus he owns 300 blankets, of which, however, he must repay 200 after the lapse of a year. He loans the blankets out among his friends, and thus at the close of the year he may possess about 400 blankets.

The next June he pays his debts (qoana′) in a festival, at which all the clans from whom he borrowed blankets are present. The festival is generally held on the street or on an open place near the village. Up to this time he is not allowed to take part in feasts. But now he may distribute property in order to obtain a potlatch name (p'ā′tsaxLäyē). This is also called Lā′X'uit.

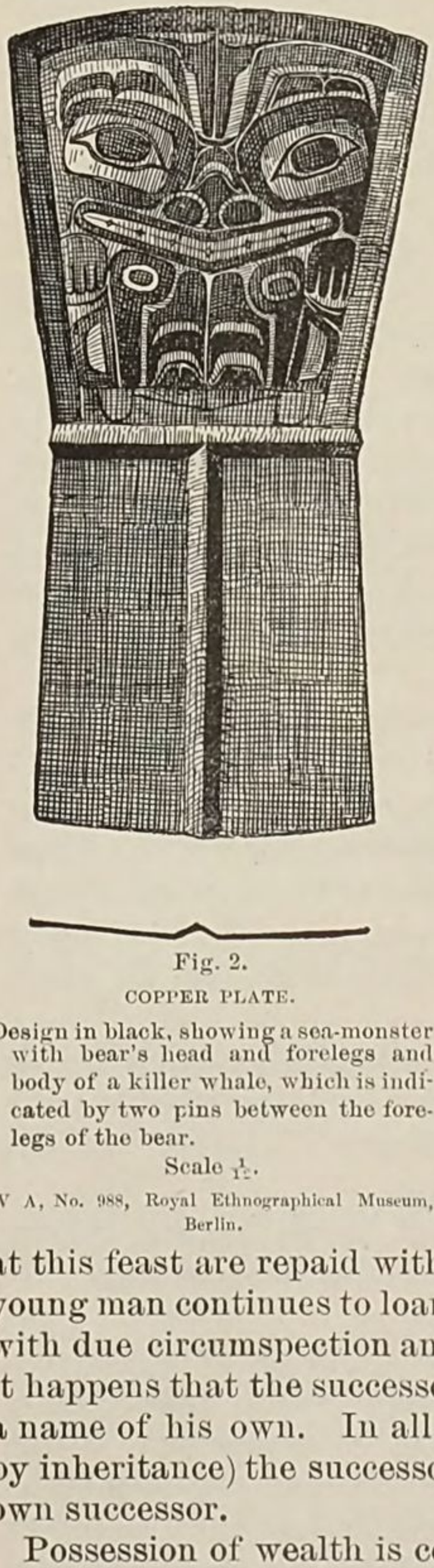


Fig. 2.

COPPER PLATE.

Design in black, showing a sea-monster with bear's head and forelegs and body of a killer whale, which is indicated by two pins between the forelegs of the bear.

Scale $\frac{1}{12}$.

IV A, No. 988, Royal Ethnographical Museum, Berlin.

At this time the father gives up his seat (Lā′Xoē) in favor of his son. After the boy has paid his debts, the chief calls all the older members of the tribe to a council, in which it is resolved that the boy is to receive his father's seat. The chief sends his speaker to call the boy, and his clan go out in company with the speaker. The young man—for henceforth he will be counted among the men—dresses with a black headband and paints long vertical stripes, one on each side of his face, running down from the outer corners of the eyes. The stripes represent tears. He gives a number of blankets to his friends, who carry them into the house where the council is being held. The speaker enters first and announces his arrival. The young man follows, and after him enter his friends, carrying blankets. He remains standing in front of the fire, and the chief announces to him that he is to take his father's seat. Then the boy distributes his blankets among the other clans and sells some for food, with which a feast is prepared. His father gives up his seat and takes his place among the old men (Nō′matsēiL). The blankets given away at this feast are repaid with 100 per cent interest. In this manner the young man continues to loan and to distribute blankets, and thus is able, with due circumspection and foresight, to amass a fortune. Sometimes it happens that the successor to a man's name (Lawu′lqame) already has a name of his own. In all such cases (also when the name is acquired by inheritance) the successor gives up his name and his property to his own successor.

Possession of wealth is considered honorable, and it is the endeavor of each Indian to acquire a fortune. But it is not as much the posses-

sion of wealth as the ability to give great festivals which makes wealth a desirable object to the Indian. As the boy acquires his second name and man's estate by means of a distribution of property, which in course of time will revert to him with interest, the man's name acquires greater weight in the councils of the tribe and greater renown among the whole people, as he is able to distribute more and more property at each subsequent festival. Therefore boys and men are vying with each other in the arrangement of great distributions of property. Boys of different clans are pitted against each other by their elders, and each is exhorted to do his utmost to outdo his rival. And as the boys strive against each other, so do the chiefs and the whole clans, and the one object of the Indian is to outdo his rival. Formerly feats of bravery counted as well as distributions of property, but nowadays, as the Indians say, "rivals fight with property only." The clans are thus perpetually pitted against each other according to their rank. The Kwakiutl tribes are counted as the highest in the order given in the above list. In intertribal rivalry they do not strive against each other, but the

Guē'tɛla against the Ma'malēleqala.
Q'ō'moyuē against the Qoē'xsōt'ēnôx.
Q'ō'mk·ūtîs against the Nɛ'mqic or Laō'koatx.
Wā'las Kwakiutl against the Lau'itsîs or Ts'ā'mas.

Fig. 3.

COPPER PLATE.

The painting on this plate represents the hawk. The upper face shows the hawk's head, and the lower face its body. The three lines on each side of the body are probably the talons.

Cat. No. 20778, U. S. N. M.

I referred several times to the distribution of blankets. The recipient in such a distribution is not at liberty to refuse the gift, although according to what I have said it is nothing but an interest-bearing loan that must be refunded at some future time with 100 per cent interest. This festival is called p'a'sa, literally, flattening something (for instance, a basket). This means that by the amount of property given the name of the rival is flattened.

There is still another method of rising in the social scale, namely, by showing one's self superior to the rival. This may be done by inviting the rival and his clan or tribe to a festival and giving him a considerable number of blankets. He is compelled to accept these, but is not allowed to do so until after he has placed an equal number of blankets on top of the pile offered to him. This is called dāpɛntg·ala and the blankets placed on top of the first pile are called dā'pɛnō. Then he receives the whole pile and becomes debtor to that amount, i. e., he must repay the gift with 100 per cent interest.

A similar proceeding takes place when a canoe is given to a rival. The latter, when the gift is offered to him, must put blankets to the amount of half the value of the canoe on to it. This is called dā′g·ōt, taking hold of the bow of the canoe. These blankets are kept by the first owner of the canoe. Later on, the recipient of the canoe must return another canoe, together with an adequate number of blankets, as an "anchor line" for the canoe. This giving of a canoe is called sā′k·a.

Still more complicated is the purchase or the gift, however one chooses to term it, of a "copper." All along the North Pacific Coast, from Yakutat to Comox, curiously shaped copper plates are in use, which in olden times were made of native copper, which is found in Alaska and probably also on Nass River, but which nowadays are worked out of imported copper. The typical shape of these copper plates may be seen in figs. 2 and 3 and Plate 4. The ┬-shaped part (qa'lā′s), which forms two ridges, is hammered. The top is called "the face" (ō′nuxLEmē), the lower part the hind end (ō′nutsExstē). The front of the copper is covered with black lead, in which a face, representing the crest animal of the owner, is graven. These coppers have the same function which bank notes of high denominations have with us. The actual value of the piece of copper is small, but it is made to represent a large number of blankets and can always be sold for blankets. The value is not arbitrarily set, but depends upon the amount of property given away in the festival at which the copper is sold. On the whole, the oftener a copper is sold the higher its value, as every new buyer tries to invest more blankets in it. Therefore the purchase of a copper also brings distinction, because it proves that the buyer is able to bring together a vast amount of property.

Each copper has a name of its own, and from the following list of coppers, which were in Fort Rupert in 1893, the values attached to some of them may be seen:

Mā′xts'ōlEm (= all other coppers are ashamed to look at it), 7,500 blankets.[1]

L'ā′xolamas (= steel-head salmon, i. e., it glides out of one's hands like a salmon), 6,000 blankets.

Lō′pēLila (= making the house empty of blankets), 5,000 blankets.

DE′nt'alayō (=about whose possession all are quarreling).

Mau′ak·'a (=sea lion).

Qau'lō′ma (=beaver face).

Lō′ita (=looking below; namely, in order to find blankets with which to buy it).

Nū′sō (=moon; its engraving represents the half moon, in which a man is sitting).

G·ā′waqa (=a spirit. Hē′iltsuq dialect, corresponding to the Kwakiutl Ts'ō′nōqoa. See p. 372).

NE′lqEmāla (=day face).

NE′nqEmāla (=bear face).

K·'ā′na (=crow; Hē′iltsuq dialect).

Qoayî′m (=whale).

Mā′x'ēnôx (=killer whale).

Qoayî′mk·în (=too great a whale).

Wī′na (=war, against the blankets of the purchaser).

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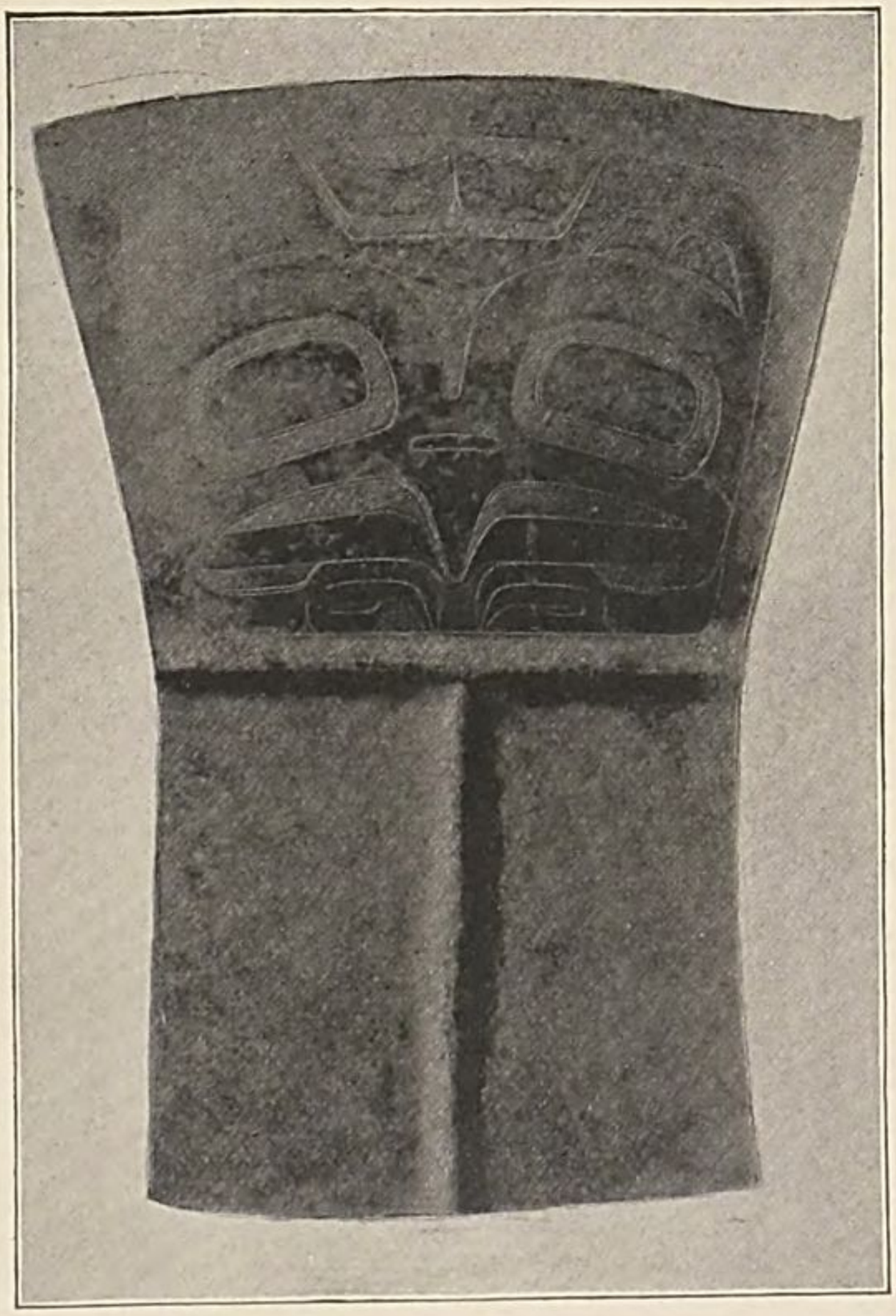
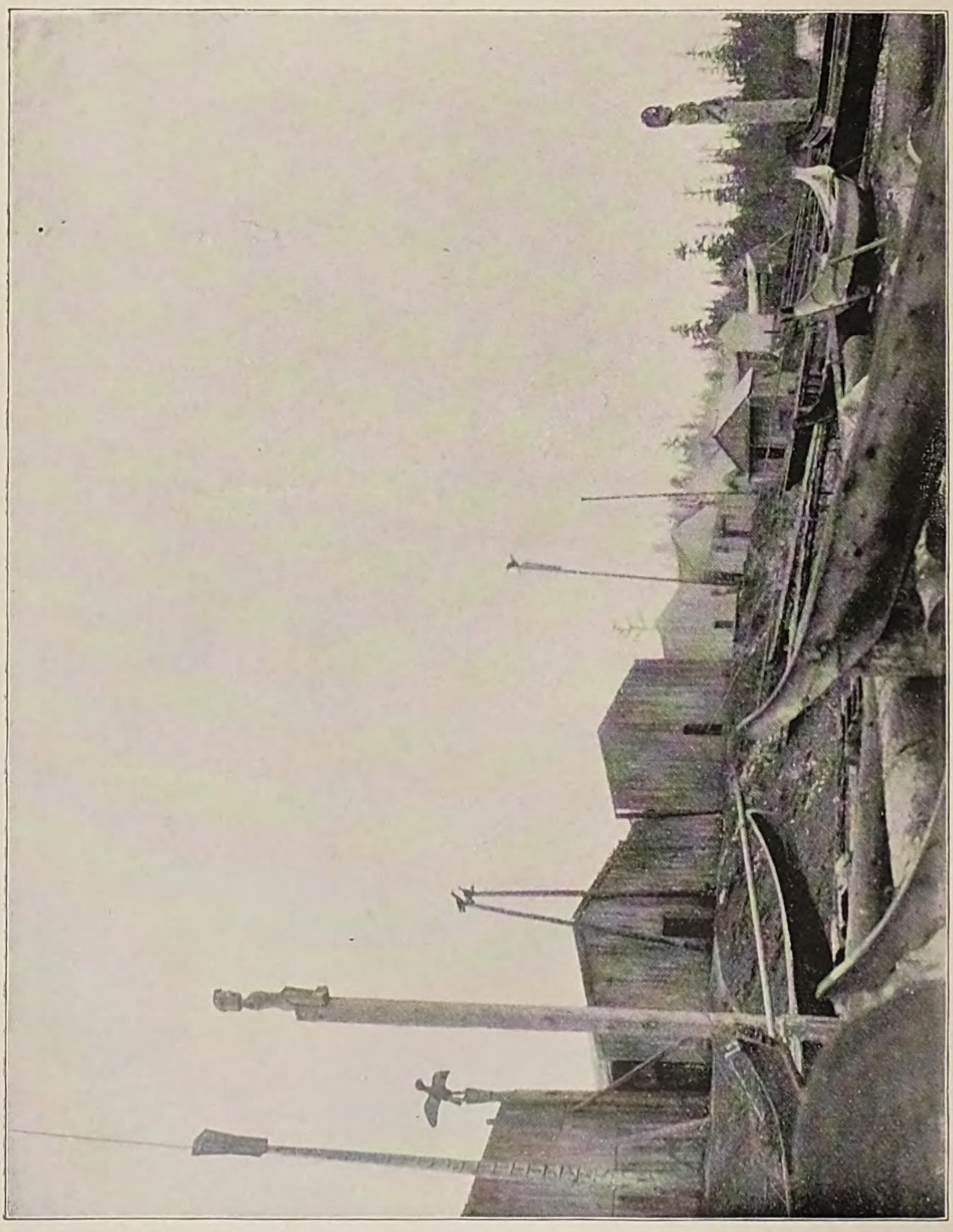
[1] This copper has two crosspieces.



COPPER PLATE WITH DESIGN REPRESENTING THE HAWK.

The design is etched and dark portions are painted black. Only the head and the feet of the bird are shown. The latter are laid under the beak.

$\frac{16}{517}$, American Museum of Natural History, New York.



a

VIEW OF FORT RUPERT, LOOKING WESTWARD, SHOWING BLANKET POSTS (*a*, *b*).

b

The purchase of a high-priced copper is an elaborate ceremony, which must be described in detail. The trade is discussed and arranged long beforehand. When the buyer is ready, he gives to the owner of the copper blankets about one-sixth of the total value of the copper. This is called "making a pillow" for the copper (qē'nulīLa); or "making a feather bed" (ta'lqoa) or "the harpoon line at which game is hanging" (dō'xsEmt), meaning that in the same manner the copper is attached to the long line of blankets; or "taken in the hand, in order to lift the copper" (dā'g·ilēlEm). The owner of the copper loans these blankets out, and when he has called them in again, he repays the total amount received, with 100 per cent interest, to the purchaser. On the following day the tribes assemble for the sale of the copper. The prescribed proceeding is as follows: The buyer offers first the lowest prices at which the copper was sold. The owner declares that he is satisfied, but his friends demand by degrees higher and higher prices, according to all the previous sales of the copper. This is called g·i'na. Finally, the amount offered is deemed satisfactory. Then the owner asks for boxes to carry away the blankets. These are counted five pairs a box, and are also paid in blankets or other objects. After these have been paid, the owner of the copper calls his friends—members of his own tribe—to rise, and asks for a belt, which he values at several hundred blankets. While these are being brought, he and his tribe generally repair to their house, where they paint their faces and dress in new blankets. When they have finished, drums are beaten in the house, they all shout "hī!" and go out again, the speaker of the seller first. As soon as the latter has left the house, he turns and calls his chief to come down, who goes back to where the sale is going on, followed by his tribe. They all stand in a row and the buyer puts down the blankets which were demanded as a belt, "to adorn the owner of the copper." This whole purchase is called "putting the copper under the name of the buyer" (Lā'sa).

In this proceeding the blankets are placed in piles of moderate height, one pile close to the other, so that they occupy a considerable amount of space. In Fort Rupert there are two high posts on the beach bearing carved figures on top, between which the blankets are thus piled (Plate 5). They stand about 40 steps apart.

On the following day all the blankets which have been paid for the copper must be distributed by the owner among his own tribe, paying to them his old debts first, and, if the amount is sufficient, giving new presents. This is called "doing a great thing" (wā'lasila).

Coppers are always sold to rivals, and often a man will offer his copper for sale to the rival tribe. If it is not accepted, it is an acknowledgment that nobody in the tribe has money enough to buy it, and the name of the tribe or clan would consequently lose in weight. Therefore, if a man is willing to accept the offer, all the members of the tribe must assist him in this undertaking with loans of blankets.

Debts which are repaid in the wā′lasila were mostly contracted in this manner.

In order to better illustrate this curious proceeding, I will describe the sale of a copper which took place in the winter of 1894–95.

First, a feast was celebrated, in which the Ma′malēleqala offered the copper Mā′xts'ōlEm for sale to the Kwakiutl. Ma′Xua, chief of the clan Maa′mtag·ila, invited all the tribes to his house. Then he spoke:

"Come, tribe, to my house. This is the house of the first Mā′Xua at G·agaxsdals.

"This is the feast house of Mā′Xua here.

"This is the house to which Mā′Xua invited at Ēg·îsbalîs.

"This is the house to which Mā′Xua invited at Qalō′gwîs.

"This is the feast house of Mā′Xua at G·ā′qîs.

"This is the house to which my father invited at Tsā′xîs.

"I take the place of my father now.

"I invited you, tribes, that you should come and see my house here.

"I am proud to speak of my ancestor, the chief who in the beginning of the world had the name Mā′Xua."

Then Mā′Xua turned to his own tribe and said: "Yes, K·'ēsōyag·ilîs. Yes, Mā′Xuag·ila. Let me speak of my ways, Wa, wa! thus I speak, my tribe." Then he turned again to the other tribes and told them to sing, saying, "Go on, tell the whole world, tribes! go on and sing; this was given to our ancestors in the beginning of the world by Kuēkuaxā′oē.[1]"

Now Mā′Xua stopped speaking, and Qoayō′Llas, chief of the Ma′malēleqala of the clan Wā′las, spoke: "Yes, Chief! it is true what you said. I thank you for your words, Chief! Our ways are not new ways. They were made by our chief (the deity) and marked out for us when he made our ancestors men. We try to imitate what our ancestors were told to do by the creator. Keep in your old ways, Kwakiutl; keep in the ways of your grandfathers, who laid down the custom for you." Then he turned to his own tribe and said: "That is what I say, Wā′k·as. That is what I say, NEg·ē′. The word of the chief shall not hurt me." Now he took the copper (Plate 6) and said: "Now sing my song!" His tribe sang, and after they had finished Qoayō′Llas spoke again: "Yes, my tribe! I can not help how I feel; I have nothing against the way, Kwakiutl, in which you treat me and my tribe. Now I will promise blankets to you, Kwakiutl, blankets to you, Guē′tEla, blankets to you, Q'ō′mōyuē, blankets to you, Q'ō′mk·ūtîs, blankets to you, Wālas Kwakiutl; this copper belongs to Ts'ā′xts'agits'Emqa, the son of Wālas NEmō′gwîs. Now take care, great tribe! This great copper has a high price; its name is Mā′xts'ōlEm (the one of whom all are ashamed). Now I am going to lay it down before you, Kwakiutl. Do not let me carry it myself, Lā′bid! Take it to the chiefs."

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[1] F. Boas, "Indianische Sagen von der Nord-Pacifischen Küste Amerikas," Berlin, 1895, page 208.

CHIEF HOLDING HIS COPPER.

Then Lā′bid arose and spoke: "Say this again, my chief! Now look out, chiefs of the Kwakiutl, this is Sē′xitg·ila Mā′xts'ōlEm.[1] This I will bring to you."

Then he stepped toward the Kwakiutl, and put the copper on the floor where they were sitting. Now Owaxā′lag·ilîs arose, took the copper, and spoke: "Thank you, Wālas NEmō′gwis. Come now, salmon, for which our forefathers have been watching. This is Mā′xts'ōlEm. I will buy this Mā′xts'ōlEm. Now pay me, Kwakiutl, what I loaned to you, that I may buy it quickly, in order to keep our name as high as it is now. Don't let us be afraid of the price of Mā′xts'ōlEm, my tribe, wa, wa! Now put down the dishes, that our tribe may eat."

Owaxā′lag·ilîs sat down, the young man distributed the dishes, and all the tribes ate. Now Mā′Xua stepped up again and spoke kindly to the eating people. "Go on," he said, "eat, Wālas NEmō′gwîs; eat, Hē′Lamas; eat, NEg·ē′; eat you, Ma′malēleqala; eat, Lā′qōLas; eat, G·′ōtē, you NE′mqic; eat, Sē′wit'ē; eat, Ē′wanuX; eat you, Lau′itsîs; eat, Wā′k·as; eat, Pō′tLidē, you, Mā′t'ilpē; eat, Wāts'ē; eat, Hē′was, you T'Ena′xtax. Eat, all you tribes. Now it is done. I have already told you of my grandfather. This food here is the good will of our forefather. It is all given away. Now, look out, Kwakiutl! our chief here is going to buy this copper, and let us help him, wa, wa!" Then spoke Hâ′mEsk·inîs and said: "Your words are true, Chief! how true are your words. I know how to buy coppers; I always pay high prices for coppers. Now take care, Kwakiutl, my tribe, else you will be laughed at. Thus I say, Ō′ts'ēstalîs; thus I say, Wa′nuk"; thus I say, young chiefs of the Kwakiutl; thus I say, Tsō′palîs; thus I say, Ō′gwîla; thus I say, Ō′mx·'it, young chiefs of the Q'ō′moyuē; thus I say, Qoē′mâlasts'ē; thus I say, Yēqawit, chiefs of the Q'ō′mk·ūtîs; thus I say, Qoayō′Llas; thus I say, Wā′kīdîs, young chiefs of the Wālas Kwakiutl. This is my speech for our children, Mā′Xuag·ila, that they may take care, wa, wa!" Then Qoayō′Llas stood up again and said: "Thank you; did you hear, Lābid? Ho, ho, ho, ho, uō, uō, uō. [The "ho" means the lifting of the heavy copper from the ground; the "uō" is the cry of the Ts'ō′nōqoa.][2] Now let me invite them, Ma′malēleqala; I believe they want to buy my copper. Now I will invite them." Then his tribe said: "Do it, do it," and he continued: "Now, Guē′tEla, behold the dance of La′qoag·īlayūkoa, the daughter of Wālas NEmō′gwîs. Now, Q'ō′mōyuē, see the dance of Āomōla, the daughter of Wālas NEmō′gwîs. Now, Q'ō′mk·utîs, see the dance of Mā′mx·oyūkoa, the daughter of Wālas NEmō′gwîs. Now, Wālas Kwā′kiutl, see the dance of Mā′Xualag·ilîs, the son of Wālas NEmō′gwîs. These are my words, wa, wa!"

Then all the guests went out. Later on Ōwaxā′lag·ilîs invited all the Kwakiutl, Ma′malēleqala, NE′mqic, Lau′itsis, T'Ena′xtax, and Mā′tilpē, because he intended to buy the copper Mā′xts'ōlEm that

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[1] The one who makes thirsty and of whom all are ashamed.

[2] See page 372.

morning on the beach. Then all the tribes assembled. Ōwaxā'lag·ilîs stood on the beach and spoke. He said:

"Now, come, chiefs of all the tribes. Yes, you come, because we want to do a great work. Now, I am going to buy the copper Mā'xts'ōlEm, of Wālas NEmō'gwîs. Only don't ask too high a price for it. And you, young chiefs of the Kwakiutl, take care and help me. Go now and bring the blankets from my house."

Then the young men went and piled up the blankets on the beach. Mā'Xua and O'ts'ēstalis counted them. One man of the Ma'malēleqala, one of the Nimkish, one of the Lau'itsis, kept the tally.[1]

Mā'Xua spoke: "It is my office to take care of the property of our chief. It was the office of my forefathers. Now I will begin." Then he counted one pair, two pairs, three pairs, four pairs, five pairs, six pairs, seven pairs, eight pairs, nine pairs, ten pairs. As soon as ten pairs were counted, he said aloud, "ten pairs," and the counters repeated, "twenty blankets," and put two stones aside. When Mā'Xua had counted another ten pairs, the counters said, "forty blankets," and put two more stones aside. They continued to put aside two stones for each ten pairs of blankets (Plates 7 and 8). Two men kept on piling up the blankets, and when they had piled up 1,000 blankets, Mā'Xua said aloud, "One thousand blankets." The blankets were piled up alongside of a carved beam standing on the beach (Plate 5). When the pile was high enough, a new one was begun right next to the first pile.

Then Ōwaxā'lag·ilis arose and spoke: "Tribes, I buy the copper Mā'xts'olEm with these 1,000 blankets. I shall not give any more unless the chiefs of all the tribes should ask for more, wa! That is my speech, chiefs of the Kwakiutl." Now he sat down and Wālas NEmō'gwîs arose. He said: "Ya, Ōwaxā'lag·ilîs! are your words true? Did you say it was enough?" Then he turned to his tribe and said, "Ya, Ōlsī'wit! Now rise, chief, and speak for me. That is what I say, Lā'bidē."

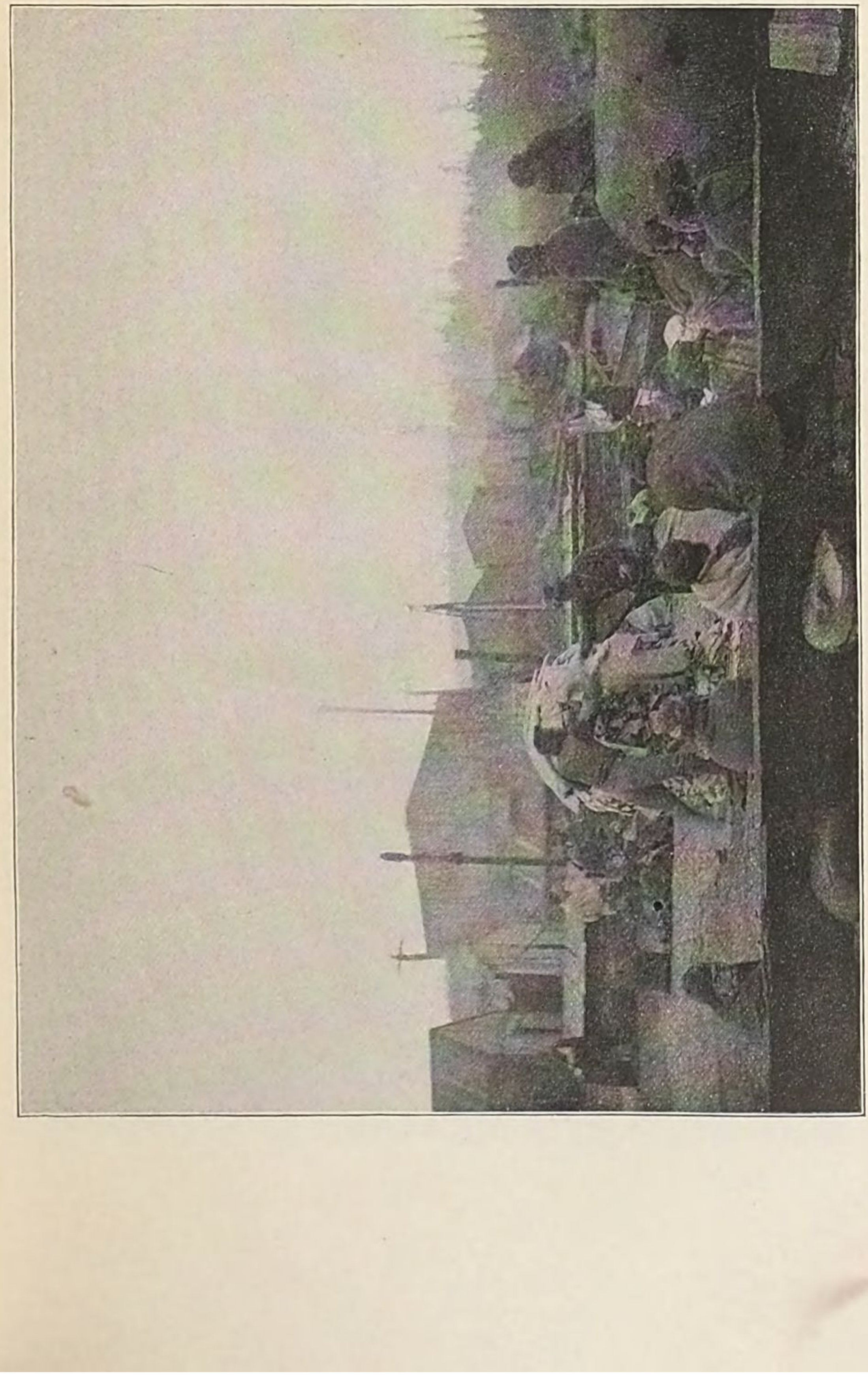
Then Olsī'wit arose (see Plates 9 and 10) and said: "Are those your words, Kwakiutl? Did you say this was all that you were going to give for the copper? Are there 1,000 blankets?" The counters replied, "Yes, there are 1,000 blankets." Olsī'wit continued: "Thank you, Ōwaxā'lag ilis, Chief. Do you think you have finished? Now take care, Kwakiutl! You, Chief, give twenty times ten pairs more, so that there will be 200 more." Then he turned to his tribe and said, "Chiefs of the Ma'malēleqala! Now, I have said my words, Chief Wālas NEmō'gwîs."

Then Ōwaxā'lag·ilîs arose and said: "Your speech, Ōlsī'wit, is good. It pleases my heart." And he said to the young men: "Go and bring 200 blankets from my house." They went at once and brought those blankets.

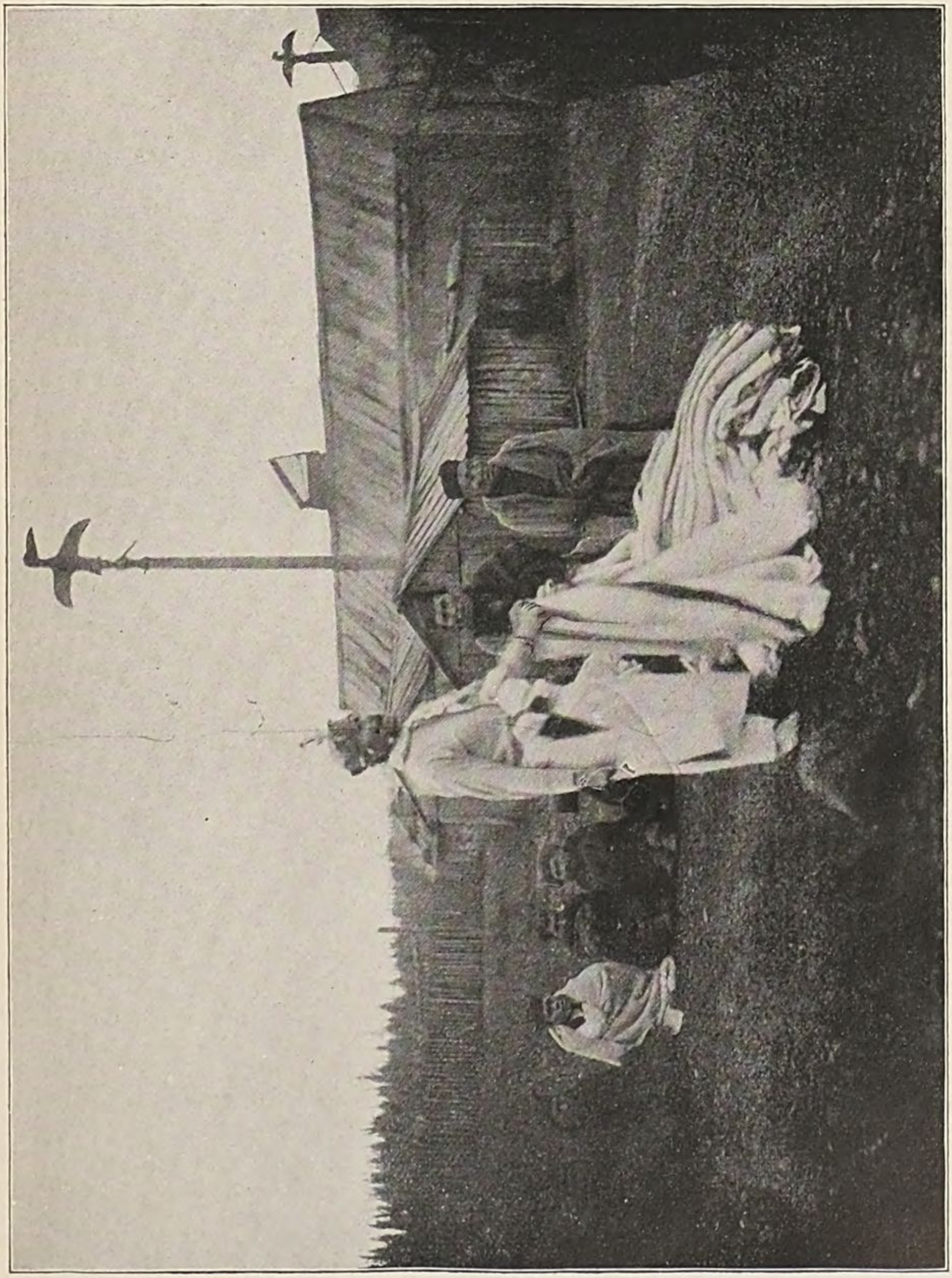
Then Ma'Xua arose and counted the blankets. He called out how

[1] Every tribe has a man to count blankets. This office is not hereditary. When coppers are traded, the song makers count blankets.

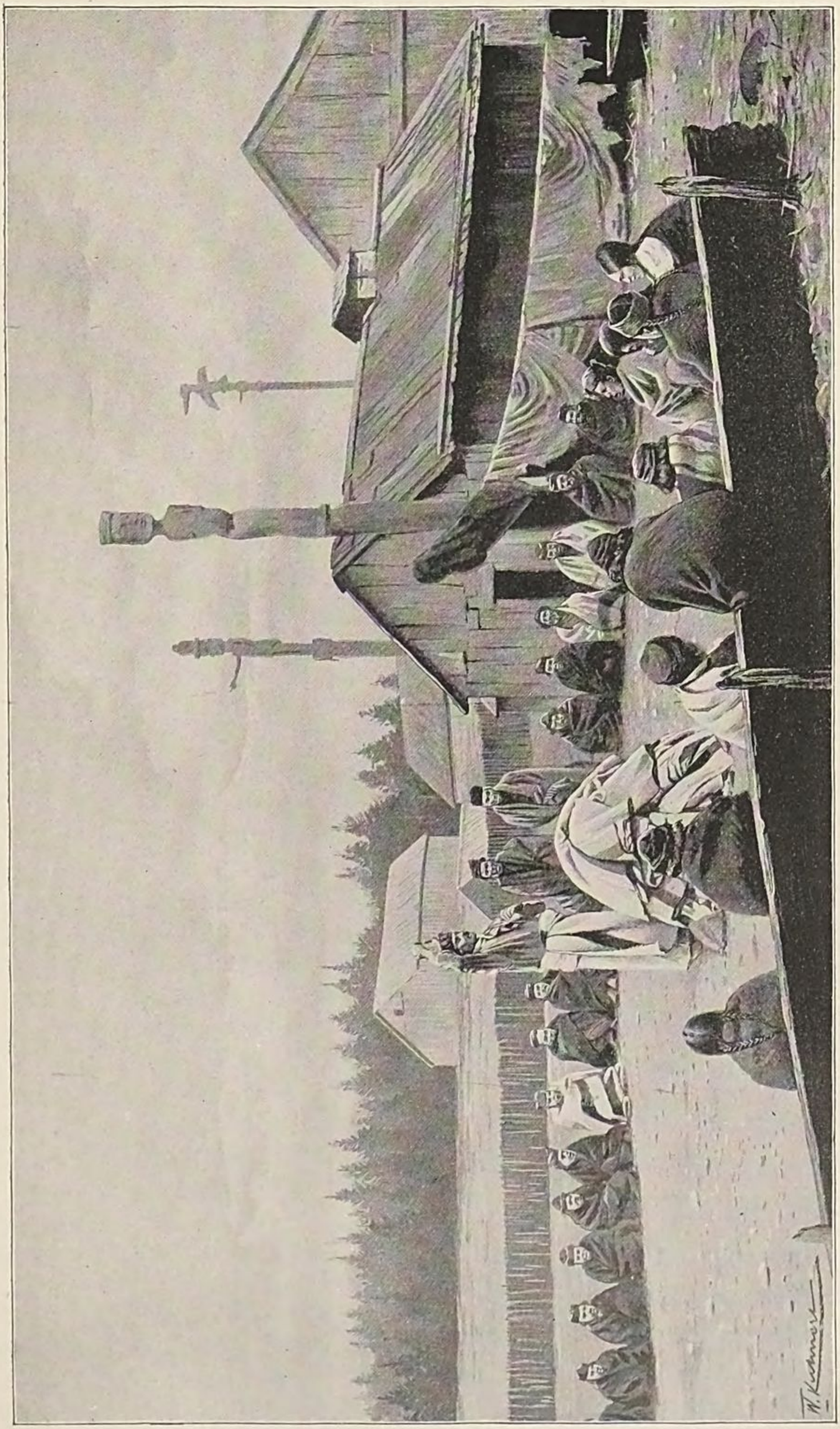
COUNTING BLANKETS.



COUNTING BLANKETS.



CHIEF DELIVERING SPEECH AT FESTIVAL.



CHIEF DELIVERING SPEECH AT FESTIVAL.

many there were. He said: "There are 1,200 blankets in a pile here, chiefs of all the tribes, wa, wa!"

Now Ōlsī'wit arose and said: "Thank you, Kwakiutl. Verily, I got all I asked for in my speech and we Ma'malēleqala are pleased, wa, wa!"

Again Wālas NEmō'gwîs arose and spoke: "Thank you, Ōwaxā'-lag·ilîs, thank you, Chief. It will not be my desire if all the chiefs of my tribe ask for more blankets. I am satisfied." Now he turned to his tribe and said: "Now we must speak, my tribe. Arise, G·ē'g·ESLEn. Speak, Chief! Speak more strongly."

Then G·ē'g·ESLEn arose and said: "How nice it is, tribes! I thank you for your words, Ōwaxā'lag·ilîs. Yes, Chiefs, that is our way, to which you must conform. You were not provident when you resolved to buy this great copper. My heart is well inclined toward you, Chief! You have not finished; you will give more. The price of the copper must correspond to my greatness, and I ask forty times ten blankets, that is 400 blankets more, Chief. That is what I mean, forty. Wa, Chief. I shall not speak again if I get what I ask from you." Then he turned to his own tribe. "Chief Wālas NEmō'gwîs, I have done what you asked of me. You asked me to speak strongly to that chief, wa, wa!"

Then Ōwaxā'lag·ilîs arose and spoke. He said: "Yes, Chief, your speech was good. You have no pity. Have you finished now asking for more, if I am willing to give your chief 400 blankets more? Answer me now!" Now G·ē'g·ESLEn spoke: "I shall not try to speak again." Owaxā'lag·ilîs sent two young men. They brought the blankets and put them down. Again Mā'Xua took the blankets and spoke:

"Ya, tribes! Do you see now our way of buying? The Kwakiutl, my tribe, are strong when they buy coppers. They are not like you. You always bring the canoes and the button blankets right away. Now there are 1,600 blankets in this pile that I carry here." He turned to the Kwakiutl and said: "That is what I say, Chiefs of the Kwakiutl, to those who do not know how to buy coppers. Now I begin again." He counted the blankets and went on in the same way as before. As soon as ten pairs of blankets were counted, they said aloud, "ten pairs," and the counters said aloud how many tens of blankets had been counted. When he had counted all, Mā'Xua spoke: "Wa, wa! Now I say to you, chiefs of all the tribes, it is really enough! I have pity upon my chief. That is what I say, chiefs."

Then Owaxā'lag·ilîs arose and spoke: "Wa, wa! I say it is enough, Ma'malēleqala. Now you have seen my name. This is my name; this is the weight of my name. This mountain of blankets rises through our heaven. My name is the name of the Kwakiutl, and you can not do as we do, tribes. When you do it, you finish just as soon as you reach the 1,000 blankets. Now, look out! later on I shall ask you to buy from me. Tribes! I do not look ahead to the time when you will buy from me. My chiefs! that is what I say, Ō'ts'ēstālîs; that is what I

say, Wā′kīdîs; that is what I say, Mā′Xualag·ilîs; that is what I say, Mā′Xuayalisamē. That is what I say for all of you from whom coppers may be bought, by the chiefs of these our rivals, the Ma′malēleqala, Wa, wa!"

Then Wālas NEmō′gwîs arose and spoke: "Yes, Chief, your speech is true, your word is true. Who is like you, Kwakiutl, who buy coppers and who give away blankets. Long life to all of you, chiefs of the Kwakiutl. I can not attain to your high name, great tribes." Then he turned to his tribe and said: "That is what I said, chiefs of the Ma′malēleqala, that we may beat these Kwakiutl. They are like a large mountain with a steep precipice. Now arise, Yā′qaLEnlîs, and speak, Chief! Let me see you that I may look up to you, Chief! Now call your name, Ts'ō′nōqoa, you, Chief, who knows how to buy that great copper. You can not be equaled by anybody. You great mountain from which wealth is rolling down, wa, wa! That is what I say, my tribe!"

Then Yā′qaLEnlîs arose and uttered the cry of Ts'ō′nōqoa: "hō, hō, hō, hō!" and he acted as though he was lifting the heavy weight of the copper from the ground. "You all know, Kwakiutl, who I am. My name is Yā′qaLEnlîs. The name began at the time when our world was made. I am a descendant of the chiefs about whom we hear in the earliest legends. The Hō′Xhoq came down to Xō′xop'a, and took off his bird mask and became a man. Then he took the name Yā′qaLEnlîs. That was my ancestor, the first of the Qoē′xsōt'ēnôx. He married Lā′qoag·ilayūqoa, the daughter of Wālas NEmō′gwîs, the first chief of the great clan WēwamasqEm of the Ma′malēleqala. That is the reason why I speak. I know how to buy great coppers. I bought this copper Mā′xts'ōlEm for 4,000 blankets. What is it, Chief? What is it, Owaxā′lag·ilîs? Come! did you not give any thought to my copper here? You always say that you are rich, Chief. Now give more, that it may be as great as I am. Give only ten times 100 blankets more, Chief Ōwaxā′lag·ilîs. It will not be much, give 1,000 more for my sake, wa, wa. This is what I say, Hā′wasalaL; that is what I say, Hē′Xuayus; that is what I say, Wawilapalasō; that is what I say for all of you, chiefs of the Ma′malēleqala, Wā, wā!"

Then Ōwaxā′lag·ilîs arose and spoke: "Yes, yes, you are feared by all, Great Chief! Do not show mercy in your speech. Now I am going to ask all of you, chiefs of the Ma′malēleqala, will you stop talking if I give you these 1,000 blankets in addition to the 1,600 blankets on this pile? If you say it is not enough after I have added the 1,000 blankets, then I will not force the purchase of the copper.

"Now answer me, Wālas NEmō′gwîs. I have seen no one giving 1,000 blankets more. I should tell a lie if I should say I had ever seen it done, as you demand, wa! That is what I say, chiefs of all the Kwakiutl."

Now Wālas NEmō′gwîs arose and spoke: "Chiefs, it is not my desire; it is the desire of all those chiefs who asked for more; I have enough.

Bring now the 1,000 blankets for which Chief Yā′qaLEnlîs asked, wa, wa! That is what I say, Ma′malēleqala, wa!"

Now Ōwaxā′lag·ilîs sent the young men to bring these 1,000 blankets. They brought them and Mā′Xua arose. He counted the blankets and called out every ten pairs. Then he made a speech: "Ya! tribes, have all the blankets here been counted?" The people replied, "Yes, yes. Do not maintain, Chief, that we lost run of the number of blankets." Then Mā′Xua continued: "There are 2,600 blankets. I am a Maa′mtag·ila, whose strength appears when they buy coppers. Take care, Chief Ōwaxā′lag·ilîs, else we shall be laughed at. Do not give in! Do not weaken, else you will not get that copper."

Then Owaxā′lag·ilîs arose and spoke: "Your words are good, Mā′Xua· It is good that you strengthen my heart. Now speak, Wālas NEmō′-gwîs! Speak, Chief, and tell me your wishes, else I shall be too much troubled. Now say your price and I will take it. That is what I say, Wā′kīdîs; that is what I say, Tsōpā′lîs, wa, wa!"

Ōwaxā′lag·ilîs sat down, and the tribes were silent. Nobody spoke, and Wālas NEmō′gwīs lay down on his back, covering his face with his blanket. For a long time nobody among all the men spoke. Then Yēqōk'uā′lag·ilîs, the younger brother of Wālas NEmō′gwîs, arose and said: "Chiefs of the Kwākiutl, I know what makes my brother here sad. Try, chiefs, that your speech may please the heart of my chief here. That is what I say, chiefs of the Ma′malēleqala, Wa, wa!"

Then Ha′mts'it arose and spoke: "Kwakiutl, I am afraid of the way in which my chief here is acting. He is making us asleep and all the tribes are asleep. That is always the way of the great chief. Now, Ōwaxā′lag·ilîs, try to please him!"

Then Ōwaxā′lag·ilîs arose and said: "Ha′mts'it! you said enough. Too many are your words. Let only him speak who knows how to buy that copper, Wālas NEmō′gwîs! Do not let these children speak. That is what I say, Kwakiutl, Wa, wa! Now look about in my house, if you find something to please the heart of this chief. Go! young men." They went, and soon they came back carrying blankets, which they put down. Ōwaxā′lag·ilîs arose at once and asked the young men how many blankets they had brought. They replied: "Six hundred blankets." He continued: "Is it true what you said? Now, chiefs of the Kwakiutl, I thank you for your words. Mā′Xua! Chief! count them!" Mā′Xua arose and counted the blankets. Then he said: "Ya! tribes, have you counted these blankets, also? There are now 3,200. Look out! chiefs of the tribes! for I shall ask you to buy our coppers also! That is what I say, NEg·ē′; that is what I say, Ē′wanuXts'ē, wa, wa! that is what I say, chiefs of the Kwakiutl, wa, wa!"

Now Wālas NEmō′gwîs arose and said: "Now take care, Ma′malē-leqala! Now, I take that price for our copper. Now give the boxes into which we may put the blankets. We need 50 boxes, and each will be worth 5 pairs of blankets."

Then Ōwaxā′lag·ilîs arose and spoke: "Thank you, Wālas NEmō′gwîs,

for your speech. You say you take the price. Now go, chiefs of the Kwakiutl, and bring the boxes! They will be 500 blankets' worth, to be paid in canoes." Then the young men went and brought short split sticks. They brought 5 sticks. Mā'Xua took them and spoke: "Ya! tribes! truly, you do not think that your words are hard against Ōwaxā'lag·ilîs? Truly, you get easily what you ask for, chiefs of the Ma'malēleqala. This canoe counts for a box worth 150 blankets. This canoe counts for a box worth 150 blankets. This canoe counts for a box worth 100 blankets. This canoe counts for a box worth 60 blankets. This canoe counts for a box worth 40 blankets, wa, wa! Enough, chiefs of the Ma'malēleqala. Now take pity on our chief here. That is what I say, Kwakiutl." Then Ōwaxā'lag·ilîs arose and spoke: "Ya, son Wālas NEmō'gwîs, I think your heart is pleased. Now there are 3,700 blankets. There are 700 of the fourth thousand. Come, Wālas NEmō'gwîs, and you, chiefs, arise, that I may adorn you." Then Wālas NEmō'gwîs arose and spoke: "Come, Mā'Xmawisaqamayē! Come, LĀ'bid! Come, Kwā'x·ilanōkumē! Come, NEmō'kwag·ilîs! Come, Hā'wasalaL! Come, Xuā'x·sistala! Come, Ōlsīwit! Come, G·ē'g·EsLEn! Come, Yā'qaLEnlîs! Come, Wā'k·asts'e! Come, Hâ'misalaL! Come, Ts'ō'xts'aîs! Let him who brought our copper look at us! Come, chiefs of the Ma'malēleqala." Then all the thirteen chiefs stood in a row, and Wālas NEmō'gwîs spoke: "This, Kwakiutl, is the strength of the Ma'malēleqala. These whom you see here are your rivals. These are the ones who have the great coppers which have names, and therefore it is hard work for you to rival them. Look out! chiefs of the Ma'malēleqala! in case they should bring us the copper Mā'xts'ōlEm, which we now sold, that one of you may take it up at once, or else we must be ashamed. That is what I say, chiefs of the Ma'malēleqala, Wa, wa! Now go on! Chief Ōwaxā'lag·ilîs!" Then Ōwaxā'lag·ilîs arose and spoke: "Yes, Wālas NEmō'gwîs, and you other good chiefs who are standing over there. Now, chiefs of the Kwakiutl, scurry about in my house for something with which I may adorn the chiefs." Then the young men went. Soon they came back, carrying 200 blankets and two split sticks, on which five straight lines were marked with charcoal.

Then Mā'Xua arose, took the split sticks, and said: "Thank you, chiefs of the Ma'malēleqala, for the way in which you act. It must be true that you are pleased with the way of our chief here. Now listen, chiefs! Adorn yourselves with this canoe, which is worth 50 blankets, and with this canoe, which is also worth 50 blankets, and with these 200 blankets here. Now there are 4,000 blankets in all, Wa, wa! Let me say, it is done!"

Immediately Wālas NEmō'gwîs made a speech, and said: "I take this price, tribes! Thank you, Chief Ōwaxā'lag·ilîs; thank you, Chief; thank you, Kwakiutl."

Now Ōwaxā'lag·ilis arose and spoke: "Ya, Wālas NEmō'gwîs. Have you taken the price, Chief?" Wālas NEmō'gwîs replied: "I have taken

the price." "Why, Wālas NEmō'gwîs," said Ōwaxā'lag·ilîs, "you take the price too soon; you must think poorly of me, Chief! I am a Kwakiutl; I am one of those from whom all your tribes all over the world took their names. Now you give up before I finished trading with you, Ma'malēleqala. You must always stand beneath us, wa, wa! Now go, young men; call our chief here, that he may come and see the tribes. Bring LĀ'qoag·ilakᵘ." Then the young men went, and soon they returned. The sister of Owaxā'lag·ilîs followed them, carrying 200 blankets. Ōwaxā'lag·ilîs spoke: "Ya, tribes, come here! This is LĀ'qoag·ilakᵘ. That name comes from the oldest legends. Now, take her clothes and you, Mā'Xua, give them away!" Now Mā'Xua counted the blankets. There were 200 blankets of the fifth thousand. There were 4,200. "Wa, wa! Chiefs of the Ma'malēleqala," said he. Then Wālas NEmō'gwîs spoke: "Thank you, chiefs! Now, Ma'malēleqala, we will divide the property to-morrow, wa, wa!"

It was described above how a boy is introduced into the distributions of property going on among the tribe. It remains to state how he acquires his first copper. When the young man has acquired a certain number of blankets, one of his older friends invites him to take a share in the purchase of one of the cheaper coppers, which may have a value of, say, 500 blankets. The boy contributes 200 blankets as his share and the other man purchases it, announcing the young man as his partner in the transaction. The copper is delivered to the young man, who becomes a debtor to his partner for the amount of blankets contributed by the latter. He announces at once that he will sell the copper the following year, but that he is willing to deliver the copper on the spot. With these words he lays it down before the tribe. One of the chiefs of a rival tribe takes the copper and pays as a first installment 100 blankets. Then the boy promises a distribution of blankets (tsō'Xua) for the following year and loans out the 100 blankets which he has received. The next year he calls in his outstanding debts and invites all the neighboring tribes to a feast, to which his own tribe contributes food and fuel. In the course of the festival he pays the chief who took his copper 200 blankets, being the value of the 100 blankets received the previous year, together with 100 per cent interest (see p. 341). Then the purchaser pays the sum of 750 blankets for the copper, including boxes and belt, as described above. Of this amount 700 are distributed on the following day in the prescribed fashion among the neighboring tribes. Now the young man proceeds to loan out his blankets until within a few years he is able to repay the share of his partner who first helped him to buy the copper. When the time has come for this transaction, his partner pays him double the amount of what he (the partner) has contributed, and the young man returns to him double of this amount.

The rivalry between chiefs and clans finds its strongest expression in the destruction of property. A chief will burn blankets, a canoe, or

break a copper, thus indicating his disregard of the amount of property destroyed and showing that his mind is stronger, his power greater, than that of his rival. If the latter is not able to destroy an equal amount of property without much delay, his name is "broken." He is vanquished by his rival and his influence with his tribe is lost, while the name of the other chief gains correspondingly in renown.

Feasts may also be counted as destruction of property, because the food given can not be returned except by giving another feast. The most expensive sort of feast is the one at which enormous quantities of fish oil (made of the oulachon) are consumed and burnt, the so-called "grease feast." Therefore it also raises the name of the person who can afford to give it, and the neglect to speedily return it entails a severe loss of prestige. Still more feared is the breaking of a valuable copper. A chief may break his copper and give the broken parts to his rival. If the latter wants to keep his prestige, he must break a copper of equal or higher value, and then return both his own broken copper and the fragments which he has received to his rival. The latter may then pay for the copper which he has thus received. The chief to whom the fragments of the first copper are given may, however, also break his copper and throw both into the sea. The Indians consider that by this act the attacked rival has shown himself superior to his aggressor, because the latter may have expected to receive the broken copper of his rival in return so that an actual loss would have been prevented.

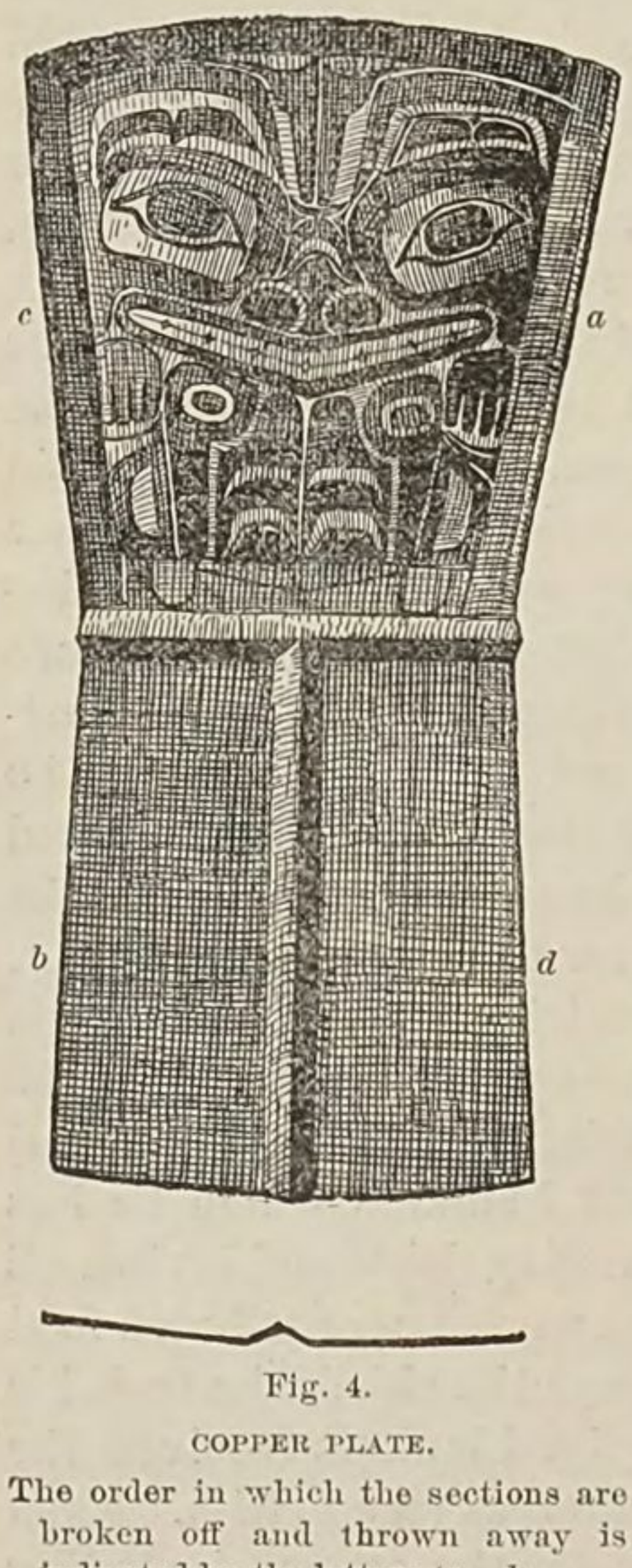


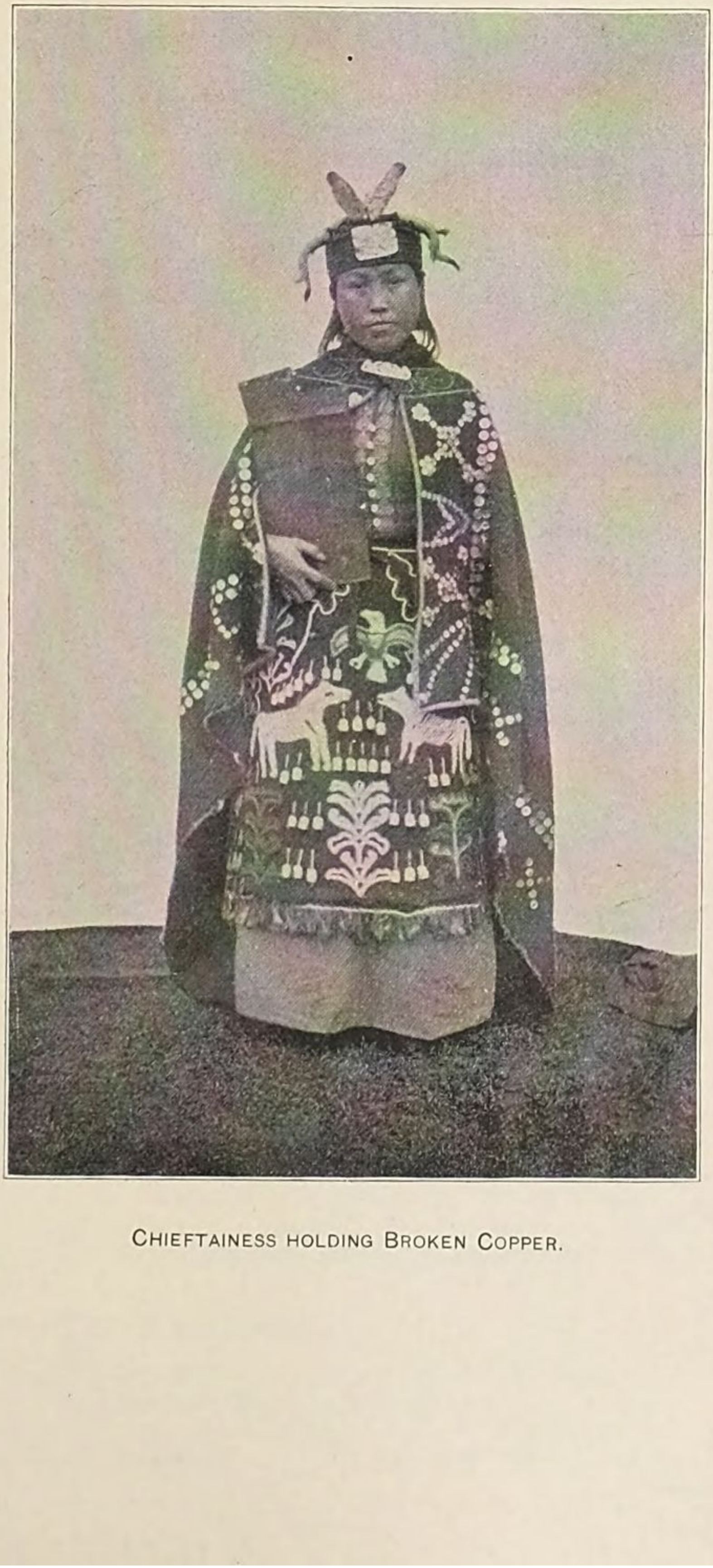
Fig. 4.

COPPER PLATE.

The order in which the sections are broken off and thrown away is indicated by the letters (*a*—*d*).

In by far the greater number of cases where coppers are broken the copper is preserved. The owner breaks or cuts off one part after the other until finally only the T-shaped ridge remains. This is valued at two-thirds of the total value of the copper and is the last part to be given away. The order in which the parts of the copper are usually broken off is shown in the accompanying illustration (fig. 4). The rival to whom the piece that has been broken off is given, breaks off a similar piece, and returns both to the owner. Thus a copper may be broken up in contests with different rivals. Finally, somebody succeeds in buying up all the broken fragments, which are riveted together, and the copper has attained an increased value. Since the broken copper indicates the fact that the owner has destroyed property, the Indians pride themselves upon their possession (see Plates 11 and 12).

CHIEF HOLDING BROKEN COPPER.



CHIEFTAINESS HOLDING BROKEN COPPER.

The rivalry between chiefs, when carried so far that coppers are destroyed and that grease feasts are given in order to destroy the prestige of the rival, often develop into open enmity. When a person gives a grease feast, a great fire is lighted in the center of the house. The flames leap up to the roof and the guests are almost scorched by the heat. Still the etiquette demands that they do not stir, else the host's fire has conquered them. Even when the roof begins to burn and the fire attacks the rafters, they must appear unconcerned. The host alone has the right to send a man up to the roof to put out the fire. While the feast is in progress the host sings a scathing song ridiculing his rival and praising his own clan, the feats of his forefathers and his own. Then the grease is filled in large spoons and passed to the rival chief first. If a person thinks he has given a greater grease feast than that offered by the host, he refuses the spoon. Then he runs out of the house (g·ē′qɛmx'it=chief rises against his face) to fetch his copper "to squelch with it the fire." The host proceeds at once to tie a copper to each of his house posts. If he should not do so, the person who refused the spoon would on returning strike the posts with the copper, which is considered equal to striking the chief's face (k·î′lxa). Then the man who went to fetch his copper breaks it and gives it to the host. This is called "squelching the host's fire." The host retaliates as described above.

The following songs show the manner in which rivals scathe each other.

First Nɛqā′pɛnk·ɛm (=ten fathom face) let his clan sing the following song at a feast which he gave:[1]

1. Our great famous chief is known even outside of our world, oh! he is the highest chief of all. [Then he sang:] The chiefs of all the tribes are my servants, the chiefs of all the tribes are my speakers. They are pieces of copper which I have broken.

[The people:] Do not let our chief rise too high. Do not let him destroy too much property, else we shall be made like broken pieces of copper by the great breaker of coppers, the great splitter of coppers, the great chief who throws coppers into the water, the great one who can not be surpassed by anybody, the one surmounting all the chiefs. Long ago you went and burnt all the tribes to ashes. You went and defeated the chief of all the tribes; you made his people run away and look for their relatives whom you had slain. You went and the fame of your power was heard among the northern tribes. You went and gave blankets to everybody, chief of all tribes.

2. Do not let us stand in front of him, of whom we are always hearing, even at the outermost limits of this world. Do not let us steal from our chief, tribes! else he will become enraged and will tie our hands. He will hang us, the chief of the tribes.

[Neqā′pɛnk·ɛm sings:] Do not mind my greatness. My tribe alone is as great as four tribes. I am standing on our fortress; I am standing on top of the chiefs of the tribes. I am Copper Face, Great Mountain, Supporter, Obstacle; my tribes are my servants.

At another feast he let his people sing:[2]

1. Do not look around, tribes! do not look around, else we might see something that will hurt us in the great house of this really great chief.

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[1] See Appendix, page 667.

[2] See Appendix, page 668.

2. "Do not look around, tribes! do not look around, else we might see something formidable in the great house of this really great chief. His house has the Ts'ō'noqoa.[1] Therefore we are benumbed and can not move. The house of our double chief,[2] of the really great chief, is taking our lives and our breath."

3. "Do not make any noise, tribes! do not make any noise, else we shall precipitate a landslide of wealth from our chief, the overhanging mountain."

4. [Neqā'pEnk·Em sings:] "I am the one from whom comes down and from whom is untied the red cedar bark[3] for the chiefs of the tribes. Do not grumble, tribes! do not grumble in the house of the great double chief, who makes that all are afraid to die at his hands, over whose body is sprinkled the blood of all those who tried to eat in the house of the double chief,[4] of the really great chief. Only one thing enrages me, when people eat slowly and a little only of the food given by the great double chief."

While these songs are merely a praise of the deeds of the singer, the following reply by Hē'nak·alasō, the rival of NEqā'pEnk·Em is bitter to the extreme. In it the singer ridicules him for not yet having returned a grease feast.[5]

1. I thought another one was causing the smoky weather? I am the only one on earth—the only one in the world who makes thick smoke rise from the beginning of the year to the end, for the invited tribes.[6].

2. What will my rival say again—that 'spider woman;' what will he pretend to do next? The words of that 'spider woman' do not go a straight way. Will he not brag that he is going to give away canoes, that he is going to break coppers, that he is going to give a grease feast? Such will be the words of the 'spider woman,' and therefore your face is dry and moldy, you who are standing in front of the stomachs of the chiefs.

3. Nothing will satisfy you; but sometimes I treated you so roughly that you begged for mercy. Do you know what you will be like? You will be like an old dog, and you will spread your legs before me when I get excited. You did so when I broke the great coppers 'Cloud' and 'Making Ashamed,' my great property and the great coppers, 'Chief' and 'Killer Whale,' and the one named 'Point of Island' and 'The Feared One' and 'Beaver.' This I throw into your face, you whom I always tried to vanquish; whom I have maltreated; who does not dare to stand erect when I am eating; the chief whom even every weak man tries to vanquish.

4. Now my feast! Go to him, the poor one who wants to be fed from the son of the chief whose own name is 'Full of Smoke' and 'Greatest Smoke.' Never mind; give him plenty to eat, make him drink until he will be qualmish and vomits. My feast steps over the fire right up to the chief.[7]

In order to make the effect of the song still stronger, an effigy of the rival chief is sometimes placed near the fire. He is lean, and is represented in an attitude as though begging that the fire be not made any hotter, as it is already scorching him (Plate 13).

Property may not only be destroyed for the purpose of damaging the

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[1] A fabulous monster. See page 372.

[2] The war chief and potlatch chief.

[3] The emblem of the winter ceremonial. See page 435.

[4] This refers to the fact that he killed a chief of the Awī'k·'ēnôx in a feast.

[5] See Appendix, page 669.

[6] Namely, by the fire of the grease feast.

[7] The first grease feast went as far as the center of the house. As NEqā'pEnk·Em did not return it, the second one stepped forward across the fire right up to him.

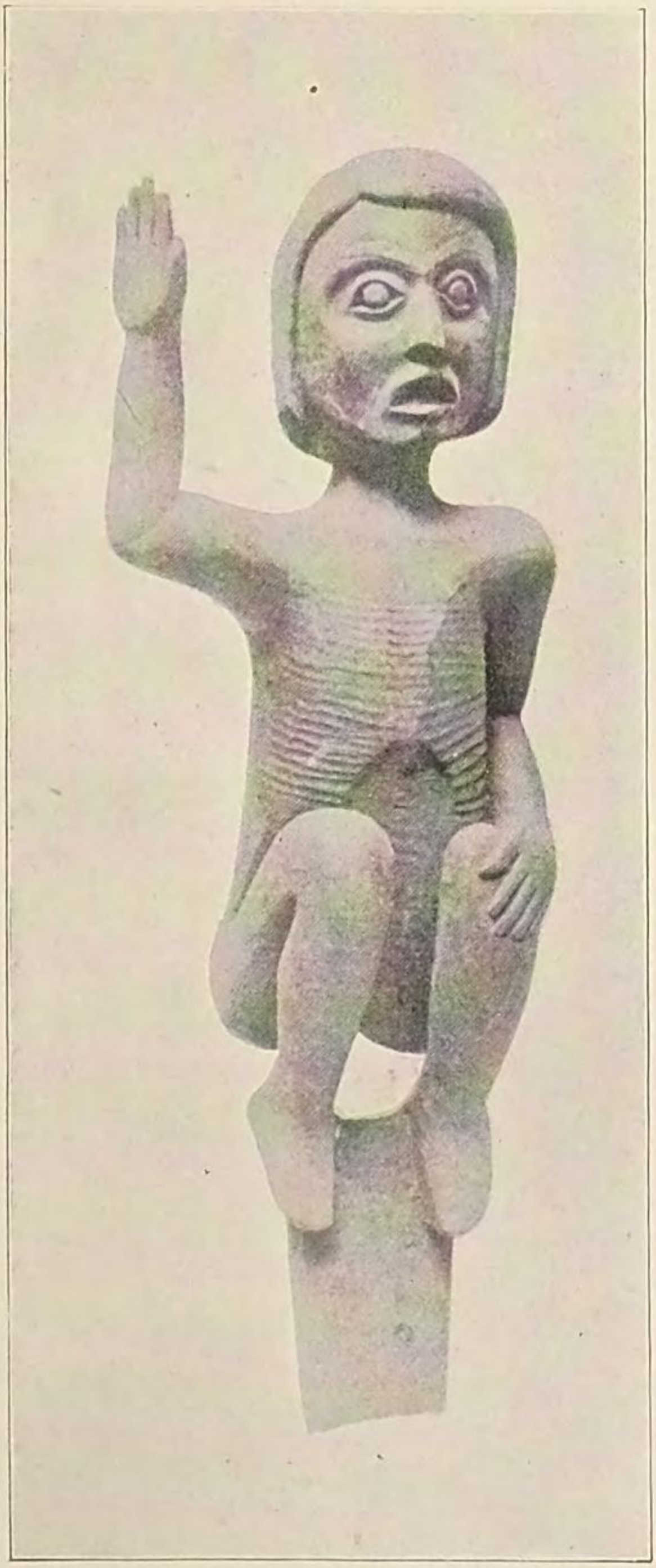
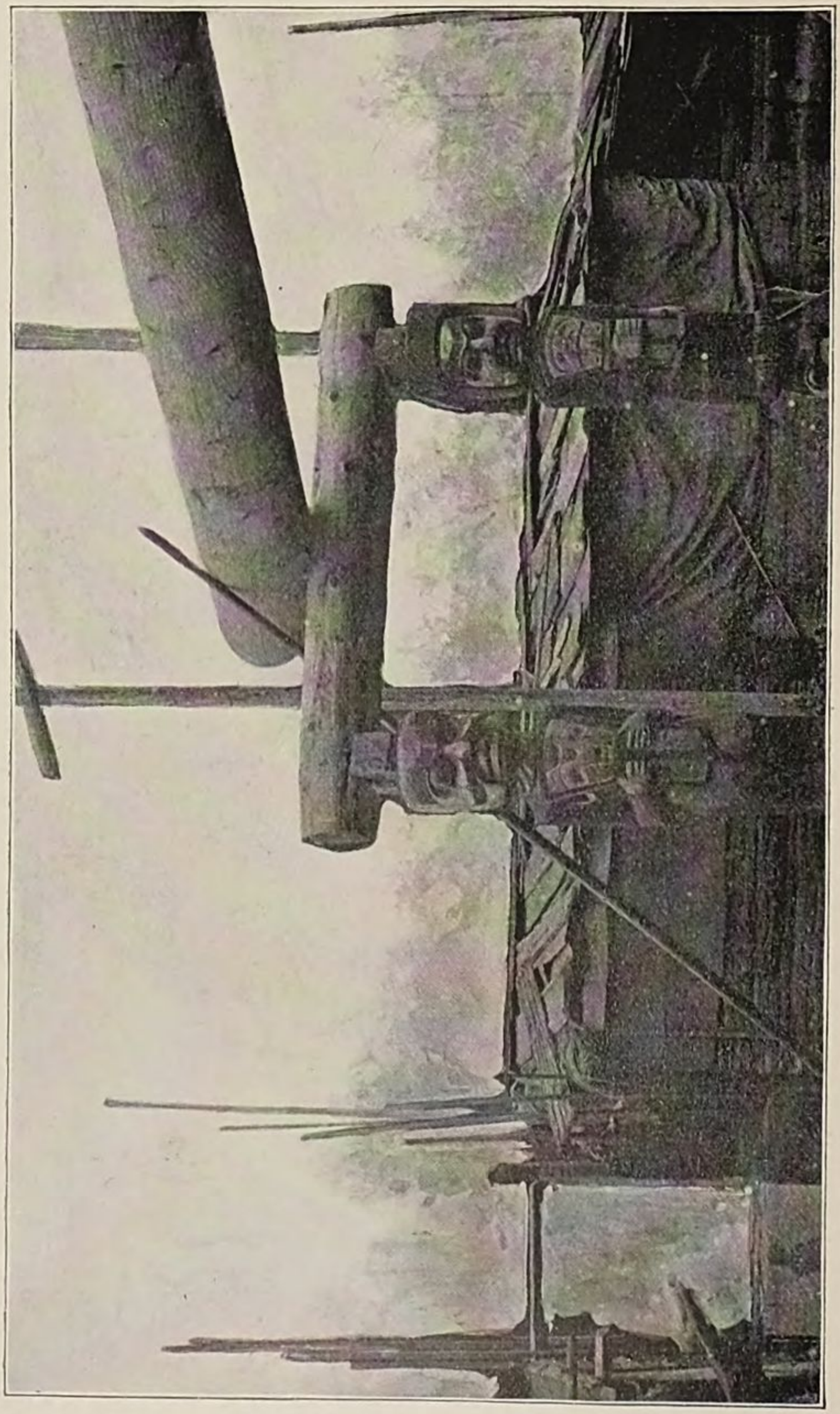


IMAGE REPRESENTING THE RIVAL CHIEF.

From A. Bastian, "Northwest Coast of America."
Original in Royal Ethnographical Museum, Berlin.



HOUSEPOSTS REPRESENTING ANIMALS HOLDING COPPERS.

prestige of the rival, but also for the sole purpose of gaining distinction. This is done mainly at the time when houses are built, when totem poles are erected, or when a son has been initiated by the spirit presiding over the secret society of his clan, to which ceremony reference has previously been made. It seems that in olden times slaves were sometimes killed and buried under the house posts or under totem posts. Later on, instead of being killed, they were given away as presents. Whenever this was done, the inverted figure of a man, or an inverted head, was placed on the pole. In other cases coppers were buried under the posts, or given away. This custom still continues, and in all such cases coppers are shown on the post, often in such a way that they are being held or bitten by the totem animals (Plate 14). At the time of the initiation of a member of the clan slaves were also killed or coppers were destroyed, as will be described in greater detail later on. The property thus destroyed is called the ō'mayū, the price paid for the house, the post, or for the initiation.

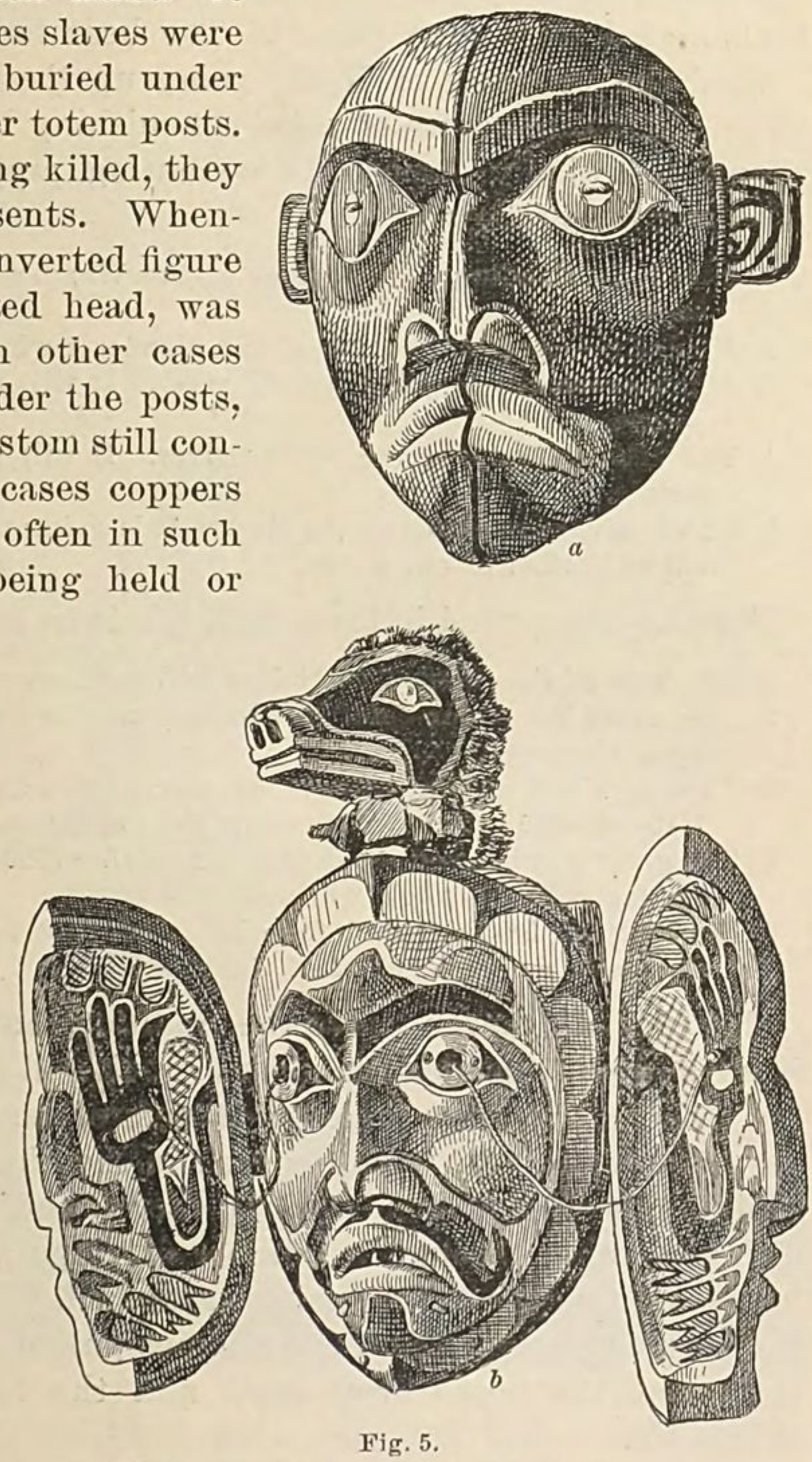


Fig. 5.

POTLATCH MASK OF THE K"KWĀ'KUM.

Double mask capable of being opened and closed by means of strings. (*a*) Outer view, representing the ancestor in an angry state of mind, vanquishing his rivals. (*b*) The mask opened, representing the ancestor in a pleasant state of mind, distributing property.

IV A, No. 1243, Royal Ethnographical, Museum Berlin. Collected by A. Jacobsen.

The distribution or destruction of property is not always made solely for the purpose of gaining prestige for one's self, but it is just as often made for the benefit of the successor to the name. In all such cases the latter stands during the festival next to the host, or, as the Indian terms it, in front of him, and the chief states that the property is distributed or destroyed for the one "standing in front of him" (Lawu'lqamē), which is therefore the term used for the chief's eldest son, or, in a more general sense, for the heir presumptive.

At all these festivals masks are occasionally worn which represent the ancestor of the clan and refer to its legend. I will give one example: In the potlatch of the clan K^{u}kwā′kum of the Q'ō′moyuē, a mask representing one of the forefathers of the present clan (not their first ancestor), whose name was Nō′lis or Wa′tsē appears,—a double mask, surmounted by a bear (fig. 5). The bear broke the dam which prevented the property of Nō′lîs going up the river. The outer mask shows Nō′lîs in a state of rage vanquishing his rivals; the inner side shows him kindly disposed, distributing property in a friendly way. His song is as follows:[1]

1. A bear is standing at the river of the Wanderer who traveled all over the world.
2. Wild is the bear at the river of the Wanderer who traveled all over the world.
3. A dangerous fish is going up the river. It will put a limit to the lives of the people.
4. Ya! The sī′siuL[2] is going up the river. It will put a limit to the lives of the people.
5. Great things are going up the river. It is going up the river the copper of the eldest brother of our tribes.

Another song used in these festivals is as follows:[3]

1. The heat of the chief of the tribes will not have mercy upon the people.
2. The great fire of our chief in which stones[4] are glowing will not have mercy upon the people.
3. You, my rival, will eat what is left over when I dance in my grease feast, when I, the chief of the tribes, perform the fire dance.
4. Too great is, what you are doing, our chief. Who equals our chief! He is giving feasts to the whole world.
5. Certainly he has inherited from his father that he never gives a small feast to the lower chiefs, the chief of the tribes.

The clan Haā′naLino have the tradition that their ancestor used the fabulous double-headed snake for his belt and bow. In their potlatches the chief of the gens appears, therefore, dancing with a belt of this description and with a bow carved in the shape of the double-headed snake. The bow is simply a long carved and painted stick to which a string running through a number of rings and connecting with the horns and tongues of the snake is attached. When the string is pulled, the horns are erected and the tongues pulled out. When the string is slackened, the horns drop down and the tongues slide back again (Plate 15).

IV. Marriage.

Marriage among the Kwakiutl must be considered a purchase, which is conducted on the same principles as the purchase of a copper. But the object bought is not only the woman, but also the right of membership in her clan for the future children of the couple. I explained

[1] See Appendix, page 670.
[2] See page 371.
[3] See Appendix, page 671.
[4] Stones heated in the fire for boiling the food to be used in the feast.

DANCE OF THE CHIEF OF THE HAA'NALINO CLAN.

before that many privileges of the clan descend only through marriage upon the son-in-law of the possessor, who, however, does not use them himself, but acquires them for the use of his successor. These privileges are, of course, not given as a present to the son-in-law, but he becomes entitled to them by paying a certain amount of property for his wife. The wife is given to him as a first installment of the return payment. The crest of the clan, its privileges, and a considerable amount of other property besides, are given later on, when the couple have children, and the rate of interest is the higher the greater the number of children. For one child, 200 per cent of interest is paid; for two or more children, 300 per cent. After this payment the marriage is annulled, because the wife's father has redeemed his daughter. If she continues to stay with her husband, she does so of her own free will (wulē'L, staying in the house for nothing). In order to avoid this state of affairs, the husband often makes a new payment to his father-in-law in order to have a claim to his wife.

The law of descent through marriage is so rigid that methods have developed to prevent the extinction of a name when its bearer has no daughter. In such a case a man who desires to acquire the use of the crest and the other privileges connected with the name performs a sham marriage with the son of the bearer of the name (Xuē'sa; Newettee dialect: dā'xsitsEnt=taking hold of the foot). The ceremony is performed in the same manner as a real marriage. In case the bearer of the name has no children at all, a sham marriage with a part of his body is performed, with his right or left side, a leg or an arm, and the privileges are conveyed in the same manner as in the case of a real marriage.

It is not necessary that the crest and privileges should be acquired for the son of the person who married the girl, but they may be transferred to his successor, whoever that may happen to be.

As the acquisition of the crest and privileges connected with it play so important a part in the management of marriages, references to the clan traditions and dramatic performances of portions of the myth are of frequent occurrence, as may be seen from the following descriptions:

I will describe first the marriage of a Ma'malēleqala Chief.

NEmō'kulag·ilîsts'ē called all the young men of all the tribes to come to his house. After a second call all the young men came. Then he arose and spoke: "Thank you, my brothers, for coming to my house. You know what is in my mind—that I want to marry to-day. You know that I wanted you to come that I might ask my brothers to invite all the people. Now dress yourselves; there is the paint and the eagle down."

The Lā'g·us arose and spoke: "Yes, NEmō'kulag·ilîsts'ē, these are your words. I and my friends will go now to make war upon the daughters of all the chiefs all over the world. Now take care, my friends!

young chiefs of all the tribes; paint yourselves and put down on your heads." Then the young men painted themselves and put down on their heads, and went out to the north end of the village. First they went into the house of Hä'masaqa. As soon as they had entered they all said, "Listen!" and Lā'g·us spoke: "Hear me, tribes! go and help to bring my bride into my house." Here he stopped, and one of the men living in the house said: "We will do so." Now they went from house to house and spoke in the same way. Then they all went back into the house of NEmō'kulag·ilîsts'ē. Then they went at once to call the tribes, and they all came. Now Wālas NEmō'gwîs spoke: "Come, chiefs of all the tribes, to hear the words of our chief. We will make war upon the tribes. Something great is in the door of the house of our future wife. That is all." Then Wālas NEmō'gwîs counted the blankets and the counters kept tally. When 200 were counted, he said: "We pay for our wife these 200 blankets here." Then he counted 100 blankets more, and said: "With these 100 blankets we will lift her. We must lift a heavy weight for the son of LĀ'lawig·ila." All the men replied: "True, true are your words, chief." Wālas NEmō'gwîs counted 100 blankets more, and said: "These are intended for calling our wife. Wa, chiefs! there are 400 blankets here, by means of which we are trying to get the daughter of LĀ'lawig·ila."

Then HĒ'LAmas arose and spoke: "Yes, son, your speech is good. All our tribes heard what you said. Now take care, else a mistake might be made. Thus I say, chiefs of all the tribes. Now arise, TĀ'qōLas, and you, Mā'Xmawisaqamaē, and you, Yā'qaLEnlîs, and you, Mā'Xuayalits'ē; we want to go to war now. Now ask if it is all right." They gave them each a single blanket to wear. Then these four men arose and went to the house of LĀ'lawig·ila. They sat down in the doorway, and TĀ'qōLas spoke: "We come, chief, to ask you about this marriage. Here are 400 blankets ready for you. Now we are ready to take our wife. That is all."

Then spoke LĀ'lawig·ila: "Call my future son-in-law, that he may come for his wife; but let him stay on the beach. You all shall stay there; only the blankets shall come into my house." Then Yā'qaLEnlîs spoke: "Thank you, Chief, for your words. Now let us tell our chief." Then they went to the house of NEmō'kulag·ilîsts'ē. They went in, and TĀ'qōLas told the answer of LĀ'lawig·ila to the chiefs of all the tribes, saying: "He told us to come soon to take our wife." Then all the young men took the blankets. They put them on the shoulder of other young men and all walked out. They put the blankets down on the beach. Then HĒ'LAmas arose and spoke: "All the tribes came; I came, LĀ'lawig·ila, to take from your arms your daughter to be my wife. Now count the blankets which we brought."

Then Wālas NEmō'gwîs arose. He took the blankets and spoke: "Yes, chiefs of all the tribes, I am not ashamed to tell about these blankets. My grandfather was a rich man. Therefore I am not

ashamed to speak." "True, true!" said all the men, "who would gainsay it, Chief!" Wālas NEmō'gwîs counted the blankets. When five pairs of blankets were counted, he put them on the shoulder of one of the four men, who carried them into the house of LĀ'lawig·ila. Thus they did until 200 blankets were counted and carried into the house. He said: "With these blankets they are married. Now we will try to lift our wife from the floor." He took the blankets and said: "With these we lift her from the floor." He counted again five pairs, put them on the shoulder of one of the young men, who carried them into the house, until 100 were counted. Then Wālas NEmō'gwîs said: "There are 100, as we told you, chiefs! Now we will call our wife." He took a blanket and said: "We call her with these," and counted in the same manner as before. When 100 blankets had been counted, he said: "There are 100 blankets here." When the four men had carried all into the house of LĀ'lawig·ila, he came out and said: "That is what I wished for. All the tribes came to marry my daughter. Let my son-in-law hear it. He shall come into my house if his heart is strong enough, wa wa!" As soon as his speech was finished, eight men brought burning torches of cedarwood. Four stood on the right-hand side of the door and four on the left-hand side. They put the burning ends of the torches close together, just wide enough apart for a man to pass through.

Now Mā'Xua arose. He was to pass through the fire. He ran up to it, but as soon as he came near it, he became afraid and turned back. Now he called NEmō'kulag·ilîsts'ē: "Hear it! his heart must be strong if he wants to accomplish what I attempted in vain." NEmōkulag·ilîsts'ē arose and said: "Yes, Mā'Xua, your word is true. Now look out, chiefs! else we shall not get my wife and I shall be ashamed of it. That is the legend which my father told me, how the daughter of Nū'nemasEqâ was married at ƍā'ƹaxsdalîs. A fire was at the door of her house. Now arise, LĀ'LiliLa, take two pairs of blankets and give them to him whose heart is strong, else our friends will try in vain to get my wife." Then LĀ'LiliLa arose, took the blankets and carried them to Wālas NEmō'gwîs, who spoke: "Tribes! Let him whose heart is strong go up to that house. These two pairs of blankets are for him who will go there." Then Mā'Xuag·ila the Koskimo arose and spoke: "I am not frightened. I am LE'lpēla. This name comes from the oldest legend. He knew how to jump into the fire. Now I will go, you beat the boards!" As soon as the men began to beat the boards he ran up to the fire, and although the torches were close together, he ran through them into the house. He was not hurt. When he got into the house, NEmō'kulag·ilîsts'ē said: "Ho, ho, ho, ho. He has succeeded! Thank you, my tribe." As soon as MāXuag·ila had entered the house the fire disappeared. LĀ'Lawig·ila came out and spoke: "Come now and take your wife, son in-law!" They brought out blankets and LĀ'Lawig·ila said: "Now I give you a small gift, son-in-law. Sell it for food. There

are 200 blankets." Then Wālas NEmō'gwîs arose: "Don't sit down, tribes. Let us sing a song of joy! Take care, chiefs of the Ma'malēleqala, we will make fun of the Kwakiutl. My chief has again given blankets. The name of my tribe is Ma'malēleqala, who vanquish all. I am feared by all the tribes. I can not be lifted. I know how to buy great coppers. I make chiefs out of poor men. Whenever I give away blankets, I do so in Tsā'xis on account of the legend of Mā'lēleqala, who was first transformed into a man at this place."

Thus spoke Wālas NEmō'gwîs and all arose and sang:

1. The deer went on the water, and tried to make war on his younger brother.
2. Kuēkuaxā'oē gave up the chase, trying to make war on his younger brother.
3. Only I do this way. Only I am the great one who takes away the daughter of chiefs, the younger brother of Kuēkuaxā'oē.

When they stopped singing, NEmō'kulag·ilîsts'ē said, "Hō, hō, hō, hō," and he promised to give away blankets. He said: "These are blankets for you, Guē'tEla; blankets for you, Q'ō'mōyuē; blankets for you, Wālas Kwakiutl; blankets for you, Q'ō'mk·ūtîs. They belong to ʇā'qoaqa, the daughter of NEmō'kulag·ilîsts'ē," and he said, "Now go to take my wife and the blankets."

Then the men went to the house of Lā'lawig·ila, and after a short time they came back. Ts'ā'ts'alkoalîs, his daughter, was among them. Then all the men went home. He did not give away the blankets at once. She went to live with her husband.

Here is the description of another marriage: The successor of Mā'Xua, chief of the Gua'ts'ēnôx, was engaged to marry Hē'nEdemîs, daughter of Ya'qaLasamē, chief of the Qō'sqēmuX. Then Mā'Xua sent four men—Kasā'lîs, Ā'witē, NEmē'mâlas, and Yā'ɣidē—to ask if Ya'qaLasamē agreed to the marriage. As soon as the four men entered his house, Kasā'lîs spoke: "I come, chief! sent to you by the son of Mā'Xua. He has 400 blankets ready to be given to you to buy in marriage your daughter, and also to take home your daughter, Ya'qaLasamē. We beg of you, O, Chief! to bend your heart to our wishes, for you have nothing to complain of. We all are of one descent. We are sent by your uncle, chief, and by your great-grandson, the successor to Mā'Xua. Thus I say, NEmē'mâlas. Now we have said our speech, Ā'witē, Yā'ɣidē. Now, Ā'witē, you speak to our uncle here." Then Ā'witē spoke: "Let me speak next, Kasā'lîs. I came, sent as a messenger by your uncle. Let us try to get our relative. Now, Yā'ɣidē, you speak next." He said: "I am the double-headed snake.[1] There is nothing in the world that I am unable to obtain. Now move your tongue, and give us an answer."

Then Ya'qaLasamē spoke: "You have finished your speeches that you were to deliver to me, chiefs of the Gua'ts'ēnôx. Only let your tribe take care, Ā'witē. Now you may have my daughter. Come here to-morrow, but strengthen your hearts. Now go and tell Chief Mā'Xua

[1] See page 371.

that I will show my legend—the fire in the house. If you do not run away from the heat of my fire, you may have my daughter. Now go, masters!"

Then the four men left the house. They went and reported the words of Ya'qaLasamē to Mā'Xua, who prayed his tribe not to fear the fire.

As soon as they had left, Ya'qaLasamē carved a large mask representing the "Sea Bear," the mouth of which opened, and attached it to a bearskin which his dancer was to wear. Then he took a basket and went to the graveyard, where he took seven skulls and other bones, which he carried home in his basket. Then he opened the mouth of the bear mask and put the skulls and the other bones into it. Next he prepared the seats for Mā'Xua and his friends close to the fireplace. He poured several bottles of grease into a wooden box and built up a high pyre, on top of which he placed the box containing the grease.

On the following day Mā'Xua called his tribe, and all prepared to go to Ya'qaLasamē's house. When they entered, Mā'Xua said: "Now be very careful, my tribe! Do not forget how kindly I feel toward all of you. If ever you ask me to help you, I do not spurn you, but I feel proud of your kind feeling toward me. Now chiefs! Ā'witē, and you, NEmē'mâlas, and you, Yā'Ƹidē, do for me as I have done toward you. I fear he will show his great fire, then let us take care, my tribe! The first Gua'ts'ēnôx were never afraid; they never fled from anything. Therefore we, our present generation, must not fear anything, wa!"

Then Yā'Ƹidē spoke: "Let us stand by our chief, Gua'ts'ēnôx! Let us stand by our chief! The name Mā'Xua comes from the time long before our grandfathers. Now our generation is living. Take care, Mā'Xua, and you, my grandson, Ƒā'ƸaxidalaLē, for the people of our tribe have seen your kind heart, wa!"

Then they loaded four canoes with the blankets, for it is a long way from the village of the Gua'ts'ēnôx to that of the Qō'sqēmuX. They paddled, and when they arrived at the village of the Qō'sqēmuX, Ā'witē arose in the canoe and said: "Now, show yourselves, Qō'sqimuX! I am of the Gua'ts'ēnôX tribe and come to get Hē'nEdemîs, the daughter of your chief, Ya'qaLasamē, as wife for my grandson, Ƒā'ƸaxidalaLē. Now, NEg·ē'tsē and Ā'witē, count the blankets!" Now they counted the blankets. As soon as there were five pairs of blankets, Ā'witē said: "Ten I am paying for my wife," and when another five pairs were counted, he said so again, and so on until all the blankets were counted. Then Ya'qaLasamē went out of the house and said: "Come, Gua'ts'ēnôx, come up from the beach into my house." Then they all went ashore and entered Ya'qaLasamē's house. When all were in, Goax·i'lats'ē spoke: "Welcome, Gua'ts'ēnôx! Come, Mā'Xua; come, Yā'Ƹidē; come, NEmē'mâlas; come, Ā'witē; come, Kā'salîs. Thank you for coming, Chief L'E'nk·alas. Now take care, Gua'ts'ēnôx, for here is the Q'ō'mōqoa, a sea monster, who swallows everything, and there in

the rear of the house is he who devoured everyone who tried to marry the daughter of Ya′qaLasamē, and this fire has hurt everyone who tried to marry Hē′nEdemîs. Now, Chief Ya′qaLasamē, light your fire and let the chief get our daughter here."

Then Ya′qaLasamē lit the fire and all the Gua′ts'ēnôx sat down close to it. When the fire was burning, Ya′qaLasamē spoke: "Now take care, Gua′ts'ēnôx, for I intend to try you. You said you were not afraid of Ts'ō′nōqoa? Now I will try all of you, chiefs of the Gua′ts'ēnôx. On account of this fire nobody can get my daughter."

When the grease began to burn, all the Gua′ts'ēnôx lay down on their backs and their blankets were scorched. Now the fire died out, and then Kasā′lîs spoke: "Ya, Qō′sqēmuX! This is my way. I am afraid of nothing. Even if you should begin to murder us, I should not run away. Now, Gua′ts'ēnôx, we have our wife. Here, Chief Ya′qaLasamē! Look at our blankets which we are giving you." Then Ya′qaLasamē spoke: "Chiefs of the Gua′ts'ēnôx, I have seen you are really a savage people, and everyone fears you. I am afraid of you, for you are the first ones who have not run away from my fire. If you had run away, you would not have obtained my daughter for your wife." Then he shouted: "Take her, Gua′ts'ēnôx! Now you, devourer of all tribes, step forward, that Mā′Xua and ƍa′ƹaxidalaLē may see who has eaten the suitors of my daughter. Now look, NEmē'mâlas; look, Ā′witē; look, Yā′ƹidē; and you, Kasā′lîs, and see the devourer of the tribes." Then Ya′qaLasamē took a pole and poked the stomach of the devourer of the tribes who had come forward. Then the mask vomited the seven skulls and the other bones and Ya′qaLasamē continued: "Now look at it, Gua′ts'ēnôx. These are the bones of the suitors who came to marry my daughter and who ran away from my fire. The devourer of tribes ate them. That is what he vomited. Now come, Hē′nEdemîs, and go to your husband!"

Then she came and went into the canoe of the Gua′ts'ēnôx. They all went into the canoe and returned home.

I will give still another example, namely, the marriage ceremony of the L'ā′sq'ēnôx, which is founded on the following tradition: A chief of the L'ā′sq'ēnôx speared a sea otter which pulled his canoe out to sea. He tried to cut the line, but it stuck to the canoe. Finally the mountains of his country went out of sight. After a long time he saw a black beach, and when he came near, he saw that it was the place where all the coal of fires goes when it drifts down the northward current of the sea. He passed this place and came to the place where all the dry sand is drifting to and fro. The sea otter continued to pull him on, and he arrived at the place where the down (of birds) is drifting on the water. He passed those and came to the place where the toilet sticks[1] are going. Finally he discovered a village on a beach. The sea otter jumped ashore and was transformed into a man, who entered the chief's

[1] Cedar splints used in place of toilet paper.

house. The chief's speaker invited the man to enter, and asked him what he wanted. The person who sees peoples' thoughts sat to the right of the door and said: "He comes to get a magical treasure." Then the chief of the sea otter, for it was he whose house he had entered, gave him a harpoon and said: "You will be the chief of the world. Do you want anything else?" "Yes," replied the man, "I want to marry your daughter." She was sitting on a platform in the rear of the house. He married her, and the chief gave him four men to show him the way home. The girl's names were Tsē'saqa (sea otter pup woman) and G·ā'laxa-îs (first to receive gifts). When they approached the village of the L'ā'sq'ēnôx, Tsē'saqa commanded her husband to throw the man who was sitting in the bow of the canoe into the water. He made him lay off his mask and threw him into the water. His name was Xa'yā'la (sound of stones rolling on the beach). Then the sea began to roll in heavy waves. The woman ordered him to throw the three other men into the water. He did so, and they were tranformed into three islands, which protect the beach of the L'ā'sq'ēnôx village. Since that time the L'ā'sq'ēnôx use four masks representing these men in their marriages.

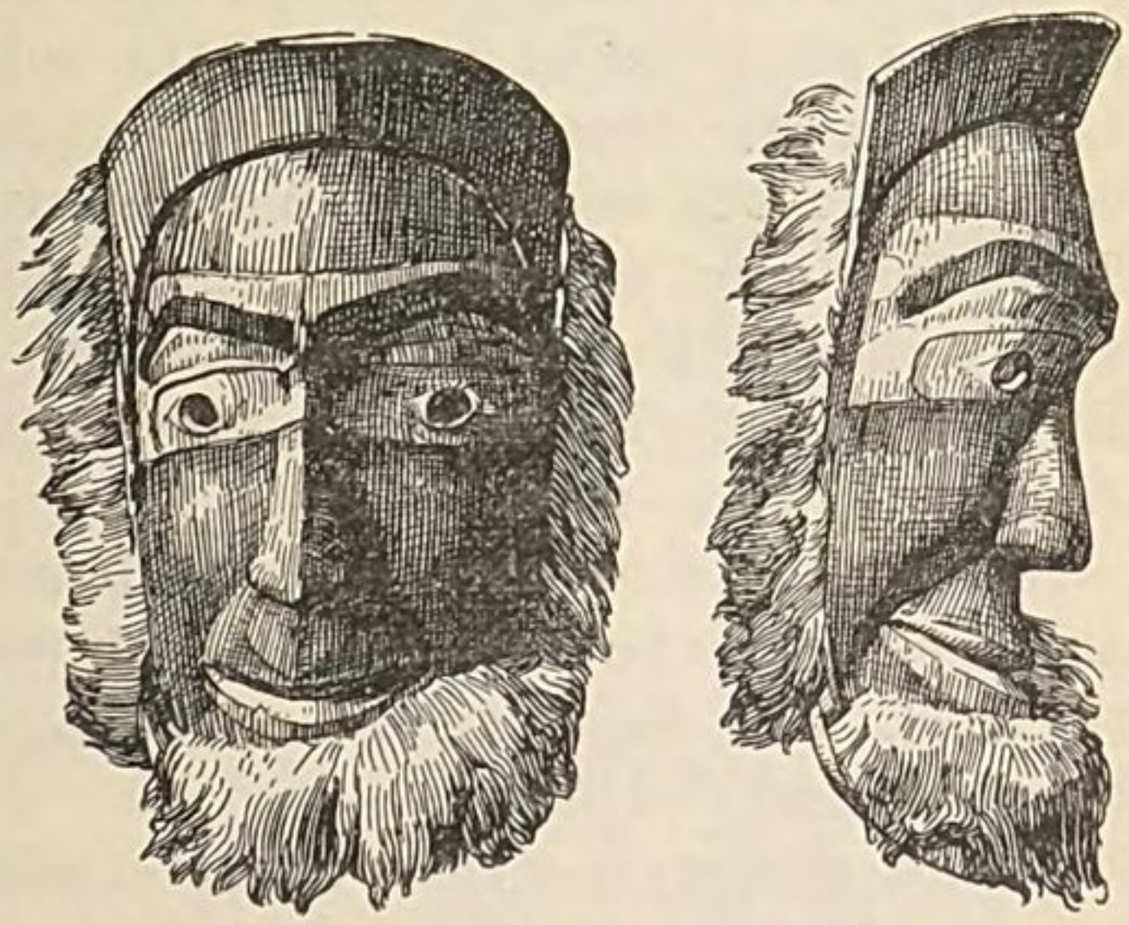


Fig. 6.
MARRIAGE MASK OF THE L'Ā'SQ'ĒNÔX.
Height 14 inches.
IV A, No. 1291, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

The bridegroom's tribe go in canoes to the girl's house. When they arrive in front of her house, four old men who wear the masks representing the four men referred to step ashore. They walk four steps and then perform a dance. They look at the girl's tribe and point toward the house as though directing their friends. Then they go back into the canoe and take their masks off. Figure 6 represents the mask of Xa'yā'la. I have not seen the three other masks belonging to the ceremony. The broad band on top of the mask represents the head ornament of cedar bark which Xa'yā'la is said to have worn. The four men receive in payment of their dance a blanket each from the bridegroom.

At this place I can describe only a portion of the ceremonial prescribed for the return of the purchase money and the delivery of the crest to the son-in-law, as it is in most cases performed as a part of the winter ceremonial and must be treated in connection with the latter subject. (See p. 421.) The return of the purchase money is called qautē'x·a, and the particular manner of return, which will be described here, LEnE'mXs'a.

The people are all invited to assemble in the house of the wife's father.

When all the guests have assembled, the father-in-law of the young man enters, accompanied by his clan. Four of them are carrying the mast of a canoe, one holding it at the top, another one at the butt, and two at intermediate points. They walk to the right and stand on the right-hand side of the door on the front side of the house, facing the middle.[1] Then the wife's father calls his son-in-law, who steps forward and stands in the right-hand rear corner of the house. The other speaker tells him that the mast represents lids of boxes (g·ī′sExstâla, see p. 421) tied together (LEnk^{u}), and that they contain everything that he owes his son-in-law. The latter replies, asking if the coppers, house, its posts, and his father-in-law's names are in it also. Even if the old man should not have intended to give all of this, he must comply with this demand and promise to give it all to his son-in-law. Next, the young man's wife is sent by her father to fetch the copper. She returns, carrying it on her back, and the young men of her clan bring in blankets. All of this is given to the young man, who proceeds at once to sell the copper off-hand. This is called "holding the copper at its forehead" (dā′g·iuē). In such a case less than one-half of the actual price is paid for the copper. If it is worth 6,000 blankets, it will bring only 2,500 blankets. The buyer must pay the price on the spot, and the blankets which the young man obtains in this manner are distributed by him right away. By this distribution he obtains the right to live in the house which his father-in-law has given to him.

Although in most marriages the house and name of the bride's father are promised to be transferred to the young man, this is not necessarily the case. The dower agreed upon may consist only of coppers, canoes, blankets, and the like.

I learned about a curious instance how a man punished his father-in-law who had long delayed the return of the purchase-money and was evidently evading the duty of giving up his name and home to his son-in-law. The latter carved an image representing his wife and invited all the people to a feast. Then he put a stone around the neck of the image and threw it into the sea. Thus he had destroyed the high rank of his wife and indirectly that of his father-in-law.

V. The Clan Legends.

It appears from what has been said before that, in order to fully understand the various ceremonies, it is necessary to be familiar with the clan legends. In the following chapter I will give a selection of legends which will make clear their connection with the carvings used by each clan and the ceremonials performed on various occasions.

It seems desirable to introduce at this place a fuller description of

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[1]The positions in the house are always given according to the Indian method: The fire is the outer side (Lā′sak), the walls the back side (ā′La). Thus right and left are always to be considered the corresponding sides of a person who is looking toward the fire from the front or rear of the house.

the plan of the house than has heretofore been given. The houses of the Kwakiutl form a square, the sides of which are from 40 to 60 feet long. (Figs. 7 and 8.) The door (D) is generally in the center of the side nearest the sea, which forms the front of the house. The latter has a gable roof, the ridge of which runs from the front to the rear. The walls consist of boards, which are fastened to a framework of poles. The sides of the door are formed by two posts (A) from 6 to 8 inches in diameter and standing about 4 feet apart. Over the door they are con-

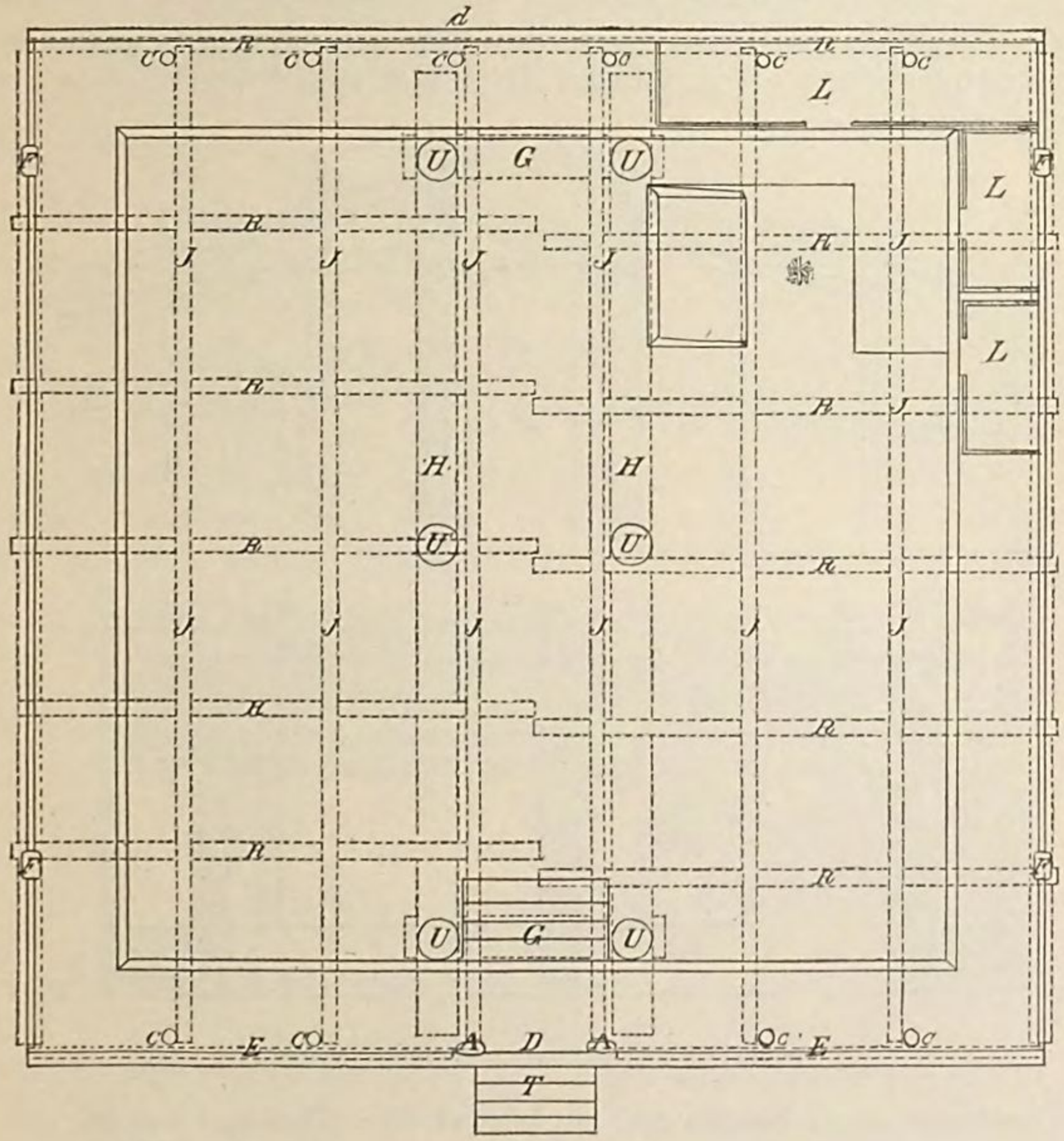


Fig. 7.

GROUND PLAN OF KWAKIUTL HOUSE.

nected by a crossbar (B). (Fig. 8.) Sometimes the framework of the door is made of heavy planks. The framework of the house front consists of two or three vertical poles (C), about 3 inches in diameter, on each side of the door. They are from 8 to 10 feet apart. Their length diminishes toward the sides of the house according to the inclination of the roof. These poles are connected by long crossbars (E), which are tied to their outer side with ropes of cedar bark at half the distance between the roof and the ground. The framework of the rear part is similar to that of the front, but that of the sides is far stronger, as it

has to support the roof. Two heavy posts (F), about 9 inches in diameter, are erected. Their heads are cut out and a beam of the same diameter is laid over them. At the joints it is cut out so as to fit into the heads of the posts. On both sides of the door and in the corresponding part of the rear side, about 3 feet distant from the central line of the house, the supports (U) of the roof are erected. These form the principal part of the framework, and are the first to be made when the house is built. They stand about 3 feet from the wall, inside the house. These uprights are about 2 feet in diameter and are generally connected by a crosspiece (G) of the same diameter. On each side of the crosspiece rests a heavy beam (H), which runs from the front to the rear of the house.

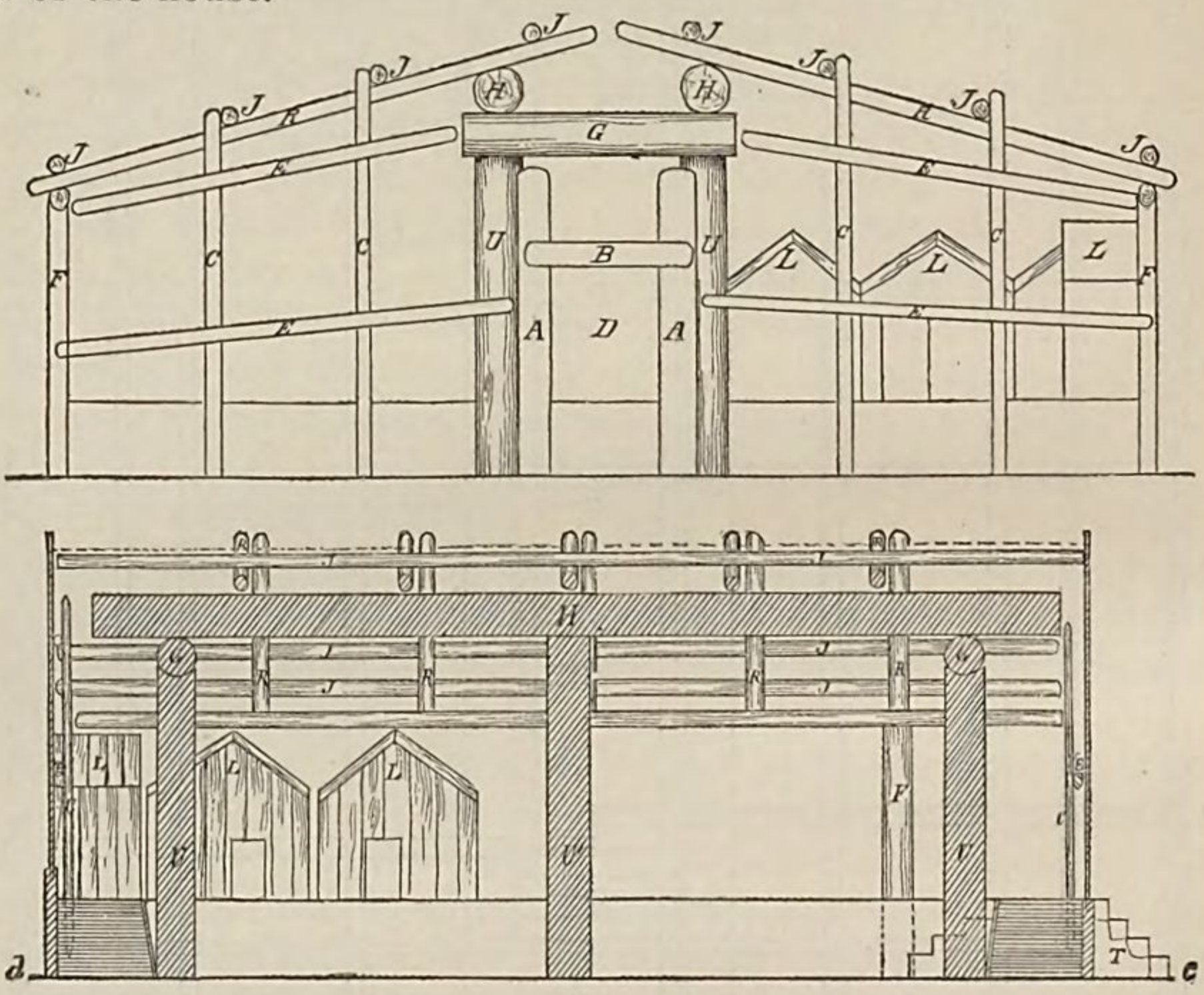


Fig. 8.

ELEVATION AND SECTION OF KWAKIUTL HOUSE.

Sometimes these beams are supported by additional uprights (U′), which stand near the center of the house. The rafters (R) are laid over these heavy timbers and the beams forming the tops of the sides. They are about 8 inches in diameter. Light poles about 3 inches thick are laid across the rafters. They rest against the vertical poles (C) in the front and rear of the house. After the heavy framework which supports the central part of the roof is erected, a bank about 3 feet in height is raised all around the outlines of the house, its outer side coinciding with the lines where the walls are to be erected. Long, heavy boards 4 or 5 inches thick are implanted lengthwise along the front of the house, their upper edges standing 2½ or 3 feet above the ground. Then the earth forming the bank is stamped against them, and thus a

platform is made running along the front of the house. Later on this is continued all around the house. The framework of the front is the next to be erected. The poles (C) stand in the dirt forming the platform. The upper edges of the front boards which were implanted into the ground are grooved, and in this groove the boards forming the front wall stand. They are tied or nailed to the crossbar (E) and to the foremost rafter, which is connected with the framework of the front. The next thing to be done is to make the rear wall and the sides. The former exactly corresponds to the front, the door only being wanting. The boards forming the side walls are implanted in the ground, standing vertically, their upper ends being tied to the beam forming the top of the framework. The platform running along the inner sides of the walls is finished by stamping the earth against the side walls. The roof consists of a peculiar kind of boards, which run from the gable to the sides of the house. They lap on their edges like Chinese tiles. This arrangement has the effect that the rain runs from the roof without penetrating into the house. The house front is generally finished by cutting the boards off along the roof and by finishing them off with a molding. A few logs are placed in front of the door, forming steps (T) that lead to the platform. Steps of the same kind lead from the platform to the floor of the house. The board forming the inner side of the platform slopes slightly inward. The house has no smoke escape, but several of the boards forming the roof can be pushed aside. During the night these openings are closed, but in the morning one board over every fireplace is pushed aside by means of a long pole. As it is necessary to look after the roof from time to time, a stationary ladder is leaned against the side of the house. It consists of one-half of the trunk of a tree or of a heavy board, into the upper side of which steps are cut.

The house is inhabited by several families, each of whom has a fireplace of its own. The corners belonging to each family are divided off from the main room by a rough framework of poles, the top of which is used for drying fish or other sorts of food. On each side of the fire stands the immense settee (fig. 11), which is large enough for the whole family. It has no feet, is about 7 feet long and 4 feet deep, and its sides slope slightly backward, so as to form a convenient support for the back. Boards are laid along the base of the rear and front platform and on the side of the fire opposite the settee. The arrangement is sometimes made a little different, the settee being wanting, or in some instances standing on the rear side. Often long boards are placed edgewise near the fire, serving as a back support. They are supported by plugs which are rammed into the floor and lean slightly backward, thus forming a convenient back support. The bedrooms have the form of small houses which are built on the platform running around the house. Most of these bedrooms have gable roofs, and their fronts are finished off with moldings. The section *c–d* (fig. 8) explains the

arrangement better than any description can do. Sometimes these rooms are enlarged by adding a low extension to the house, the floor of which is elevated as high as the platform. In the center of such rooms there is a small fireplace. The plans of the houses of the separate gentes show slight differences. In some instances the heavy beams (H) rest on the uprights (U), the crosspiece (G) being wanting (fig. 9). In other instances there is only a single timber resting on the crosspiece (G). When festivals are celebrated, all the partitions, seats, and fires are removed, and one large fire is built in the center of the house. For such occasions the floor is carefully leveled and swept. Each house has its name, as will be seen from the view of the village of Xumta′spē (fig. 26, p. 391), in which the names of four of the houses are given. In front of the village the bight Ōkuiuā′Le is seen, bounded by the narrow point Lā′sōta, on which the natives grow some potatoes in a small inclosure. Behind this point the hills of Galiano Island, KaxaxLā′ and Wē′xōeoa, are seen, which are frequently mentioned in the legends of these tribes. The island is divided from Hope Island by the Strait of Ōxsâ′.

Fig. 9.

VIEW OF REAR PART OF HOUSE IN XUMTA′SPĒ.

From a sketch by the author.

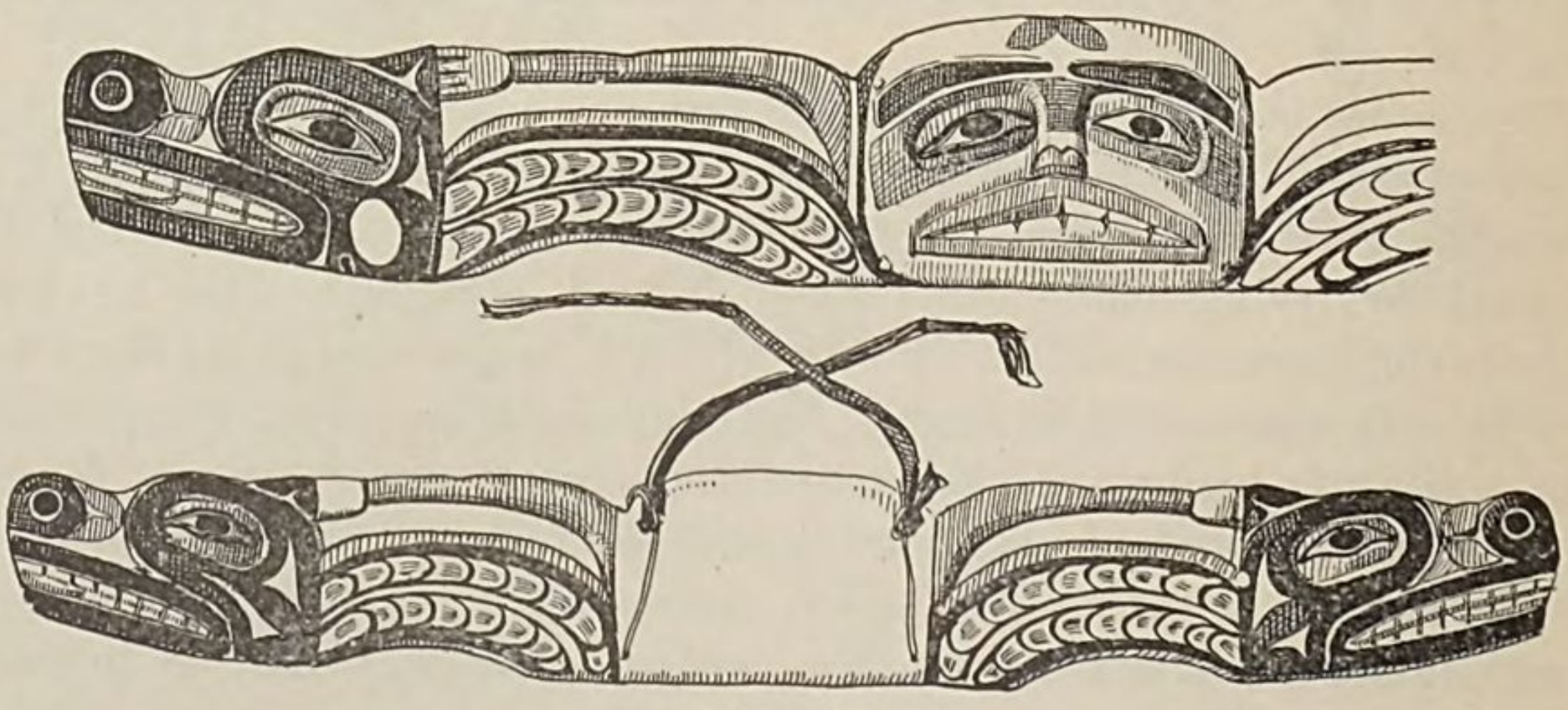


Fig. 10.

WOOD CARVING REPRESENTING THE SI′SIUL.

Worn in front of the stomach and secured with cords passing around the waist.

Length 42 inches.

IV A, No. 6891, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

The houses generally face the beach and are built in a row. (See fig. 26, p. 391.) In front of the town there is a street, which is carefully leveled, the lower side being supported by an embankment of heavy logs. From here steps lead down to the beach, where the canoes are lying. Oppo-

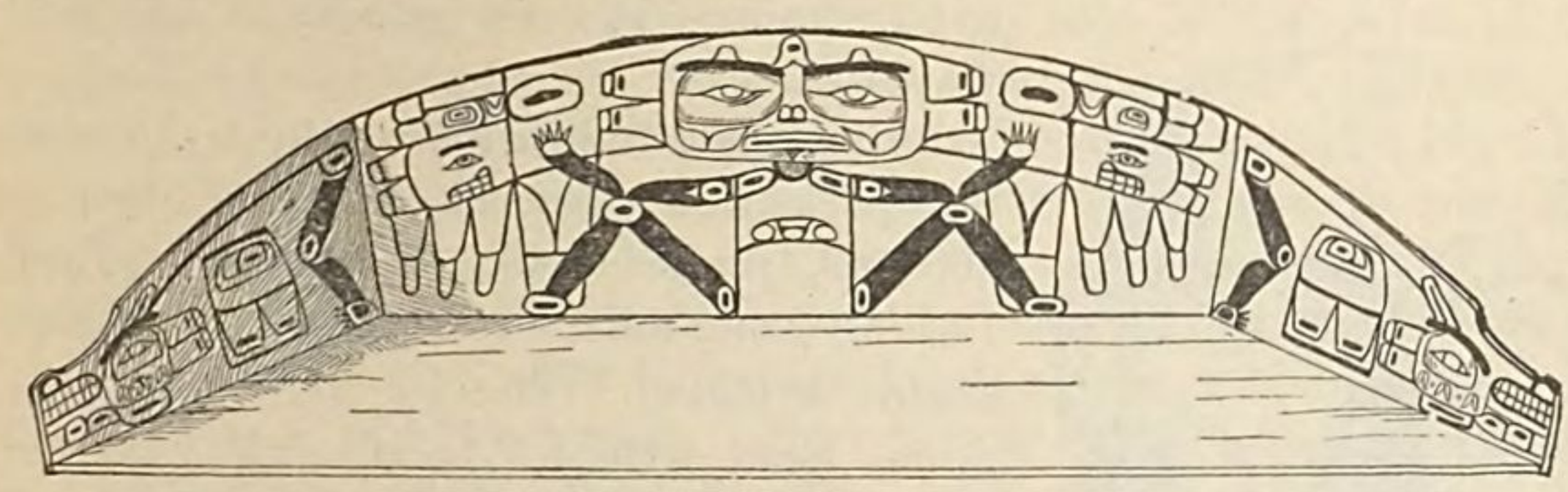


Fig. 11.

SETTEE, WITH CARVING REPRESENTING THE SI'SIUL.

From a sketch by the author.

site to the houses, on the side of the street toward the sea, there are platforms; summer seats, on which the Indians pass most of their time, gambling and conversing. The platform rests on a framework of poles and on the embankment of the street, as shown in fig. 26.

I proceed now to a discussion of the clan legends.

First of all, it is necessary to describe and enumerate a number of supernatural beings who may become the supernatural helpers of man, as they appear over and over again in the clan legends. Besides a number of animals, such as wolves, bears, sea lions, and killer whales, which, however, do not play a very important part as protectors of man, we find principally a number of fabulous monsters whose help was obtained by the ancestors, and who therefore have become the crest of the clan.

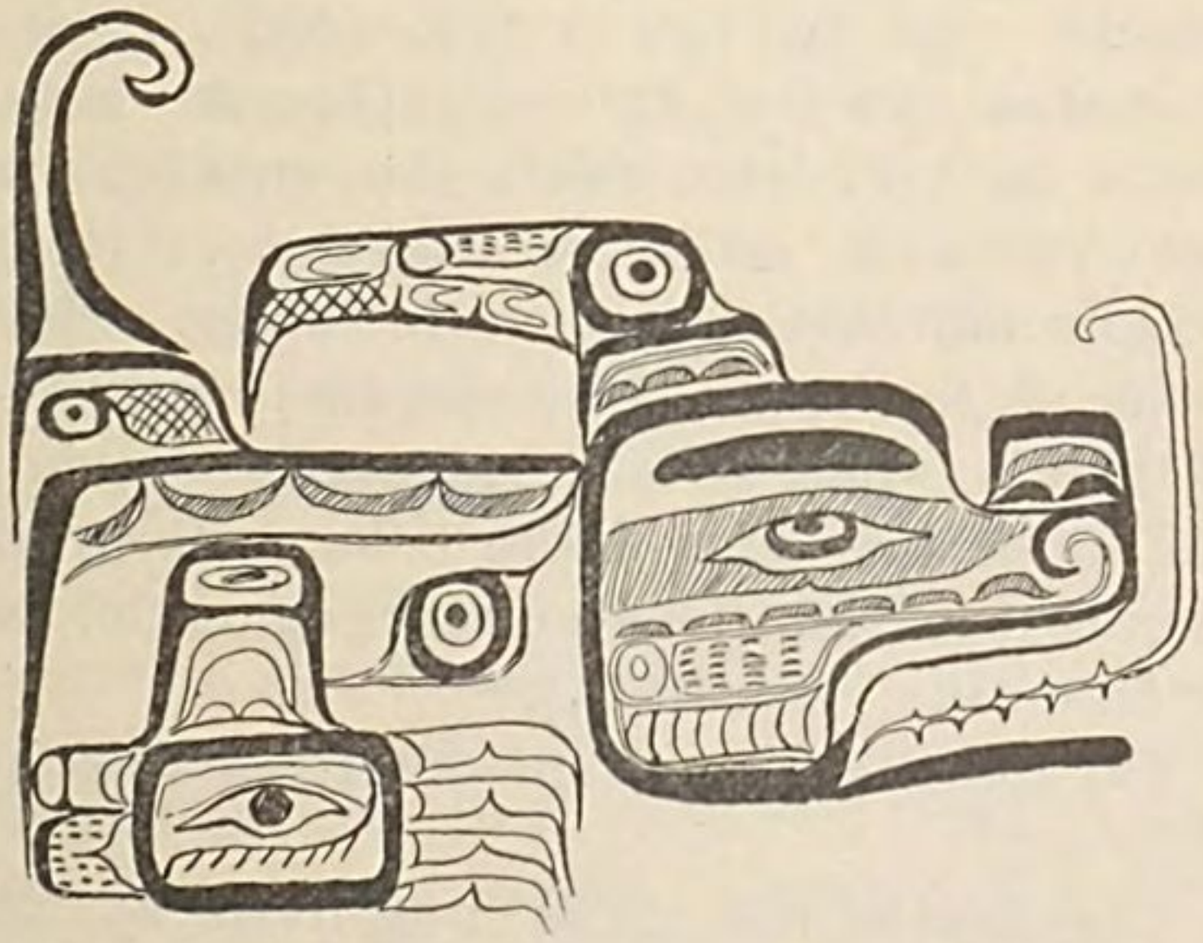


Fig. 12.

THE SĪ'SIUL.

From a painting by a Kwakiutl Indian.

Perhaps the most important among these is the sī'siuL, the fabulous double-headed snake, which has one head at each end, a human head in the middle, one horn on each terminal head, and two on the central human head. (Fig. 10.) It has the power to assume the shape of a fish. To eat it and even to touch or to see it is sure death, as all the joints of the unfortunate one become dislocated, the head being turned backward. But to those who enjoy supernatural help it may

bring power; its blood, wherever it touches the skin, makes it as hard as stone; its skin used as a belt enables the owner to perform wonderful feats; it may become a canoe which moves by the motions of the sī′siuL fins; its eyes, when used as sling stones, kill even whales. It is essentially the helper of warriors.

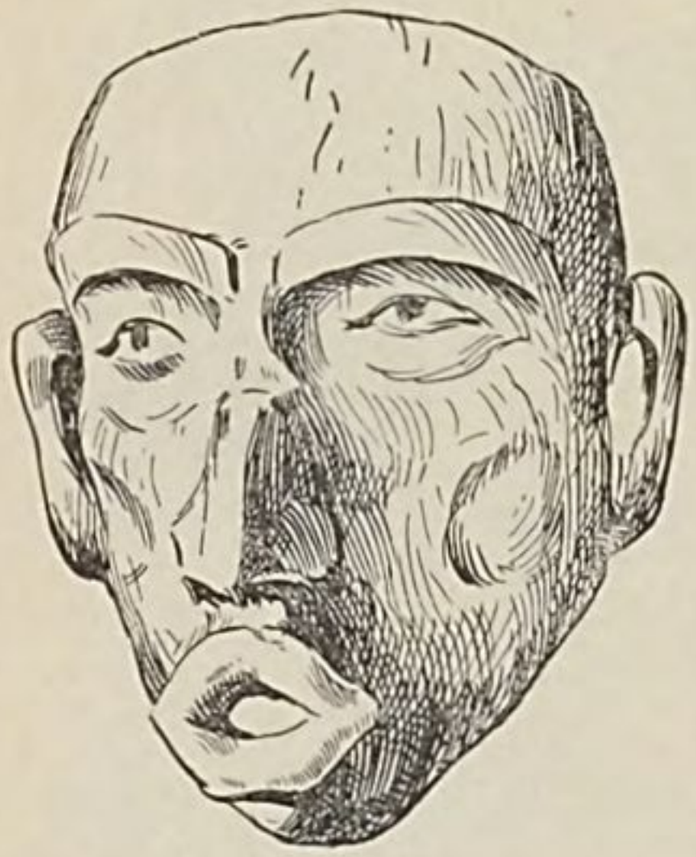


Fig. 13.

MASK REPRESENTING THE TS'Ō′NOQOA.

Cat. No. 129516, U.S.N.M. Collected by Franz Boas.

I give here a few forms in which the sī′siuL is represented (figs. 11, 12. See also, figs. 166–169, pp. 514, 515, Plate 15). In fig. 12 only one-half of the sī′siuL is shown. The terminal head, with its horn laid backward, is plainly seen. The upper line behind the head designates the body, from which downward and forward extends one leg, the foot of which is quite clear. One of the central horns is shown over the point of attachment of the leg.

Fig. 14.

HOUSE POST IN XUMTA′SPĒ REPRESENTING THE TS'Ō′NOQOA.

From a sketch by the author.

Another being which figures largely in the clan legends of the Kwakiutl is the Ts'ō′noqoa, a wild woman who resides in the woods. She is represented as having enormous breasts and as carrying a basket, into which she puts children whom she steals in order to eat them. Her eyes are hollow and shine with a wild luster. She is asleep most of the time. Her mouth is pushed forward, as she is, when awake, constantly uttering her cry, "ū, hū, ū, ū." This figure belongs to a great many clan legends, and is often represented on house posts or on masks (figs. 13, 14).

The following tradition describes this spirit quite fully:

The first of the L'ā′sq'ēnôx lived at XāmX. On the one side of the river lived the clan Wī′sEnts'a. One day the children went across the river to play there. They made a house of fir branches and played in it. One of the boys went out of the house and he discovered a giantess who was approaching the house. He told his friends, who came running out of the house. The giantess was chewing gum which was as red as blood. The children wanted to have some of the gum. Then she called them and gave them some. They asked her: "Where do you get your gum?" "Come," she replied,

"I will point it out to you." Then the children crept into the basket which she carried on her back and she went into the woods. She was Aō'xLaax (or Ts'ō'noqoa). She carried them far into the woods. Then she put the gum on their eyes and carried them to her house. She was a cannibal. Among the children were two sons of the chief of the Wī'sEnts'a; LŌ'pEk·'axstElîL [1] was the name of the chief. His wife was LE'wag·ilayuqoa. Then she cried, and sometimes she would blow her nose and throw the mucus on the ground. Suddenly she discovered a little boy lying on his back on the floor. He had originated from the mucus of her nose. She took the boy up and carried him into the house. He grew very quickly; after four days he was quite strong. Then he asked for a bow and two arrows. Now he was called LE'ndEqoayats'EwaL. When he had received his bow and arrows, LE'wag·ilayuqoa asked him not to go across the river, but he did so against her request. He followed the trail which he found on the other side. He came to a house and entered. There he saw children sitting on the floor, and a woman named L'ō'pEk·'axstElîL, who was rooted to the floor. The latter spoke: "Don't stay long, Chief! She is gone after water; if she should come back, she will kill you." Then he went out and followed the trail. All of a sudden he saw the Ts'ō'noqoa coming. She carried a bucket in each hand. The little boy climbed a tree, in order to hide in its branches. The Ts'ō'noqoa saw his image in the water and made love to him. She looked up and discovered him. Then she called him to come down. Now he came down to her and that woman asked him: "How does it happen that you look so pretty?" The boy said: "I put my head between two stones." She replied: "Then I will take two stones too." He sent her to fetch two stones and soon she came back carrying them. She put them down. The boy said: "Now lie down on your back." Then the boy put the one stone under her head and told her to shut her eyes. Then he took the other stone and dropped it as hard as he could on her head. Her head was smashed and her brains were scattered. She was dead. The boy broke her bones with the stones and threw them into the water. Then he went into her house. As soon as he had entered, the woman who was rooted to the floor said: "Now do not stay long. I know that you have tried to kill the Ts'ō'noqoa. It is the fourth time that somebody tried to kill her. She never dies; she has nearly come to life. There in that covered hemlock branch (knothole?) is her life. Go there, and as soon as you see her enter shoot her life. Then she will be dead." She had hardly finished speaking when the Ts'ō'noqoa came in, singing as she walked:

I have the magical treasure,
I have the supernatural power,
I can return to life.

That was her song. Then the boy shot at her life. She fell dead to the floor. Then the boy took her and threw her into the hole in which she

[1] This does not seem quite clear. The name means: "Rooted to the floor," and appears farther on as that of a woman living in the Ts'ō'noqoa's house.

was going to roast the children. He washed their eyes with urine and took them home to XanX. They were all alive again. Then LE'ndE-qoayats'EwaL went back to heaven.

Of less frequent occurrence is the spirit of th esea, Q'ō'mōqoa, the protector of the seals, who kills hunters. There are a number of tales relating how he took the ancestor of a tribe to the bottom of the sea and gave him his crest. I will give here a legend of the clan G·ēxsEm, of the La'Lasiqoala, which shows how they came into the possession of the Q'ō'mōqoa carving: Ō"meaL, the Raven, the ancestor of the clan G·ē'xsEm, had a daughter named Hā'taqa. One day the crow, who was Ō"meaL's sister, and Hā'taqa went down to the beach to gather sea urchins. Soon they had filled their baskets. The crow carried them into the woods, broke the shells, and prepared them. Then she offered some to Hā'taqa, who refused them, for fear of her father. The crow, however, promised that he would not tell on her, and prompted Hā'taqa to eat of the sea urchins. She had hardly begun to eat when the crow jumped upon a log of driftwood, shouting, "Qāx, qāx, qāx, qāx! Hā'taqa is stealing sea urchins." Hā'taqa asked her, "Please stop, and I will give you my blanket." The crow, however, did not cease shouting, although Hā'taqa offered her her bracelets of abalone shells. But already Ō"meaL had heard what the crow said. He was enraged, and ordered his tribe to load their canoes and to extinguish the fires. Then he and his whole tribe left Hā'taqa all alone in the deserted village. Hā'taqa's grandmother, however, had pity upon the girl, and before she left she had hidden some fire in a shell. A dog and a bitch were the only living beings that were left in the village besides Hā'taqa. As soon as the canoes were out of sight, the dog, by dint of scratching and howling, attracted her attention to the shell. She found the glowing embers and started a fire. She built a hut of cedar twigs, in which she lived with her dogs. The following morning she sent them into the woods and ordered them to fetch withes. They obeyed, and Hā'taqa made four fish baskets. At low water she placed them on the beach, and at the next tide she found them full of fish. But on looking more closely she discovered a man in one of them, Aik·a'a'yōlisāna, the son of Q'ō'mōqoa. He came from out of the basket, carrying a small box. He said to her, "Carry this small box to your house. I came to marry you." Although the box was small, Hā'taqa was unable to lift it, and he had to carry it himself. When he arrived in front of the house, he opened it, and, behold! a whale was in it. Aik·a'a'yōlisāna built a large house and married Hā'taqa. Then he invited all the tribes and distributed the whale meat. His descendants use his mask (fig. 15), and when it is shown, sing as follows:

It is a tale which came down to us from the beginning of the world.
You came up, bringing the house of Q'ō'mōqoa, you "Growing rich,"
"Wealth coming ashore," "Covered with wealth," "Mountain of property."
"Really great Mountain." It is a tale which came down to us from the beginning of the world.[1]

[1] See Appendix, page 673.

Whatever the tradition of the clan may be, the figures with which house and implements are ornamented refer to this legend. I am not familiar with all the legends, which often are quite trivial, merely stating that the ancestor met such and such a being. I give here a number of figures, which will illustrate the connection between the clan legend and the ornamentation of various objects. Fig. 16 shows the house front of the clan G·ē′xsEm of the La′Lasiqoala. It represents the thunder bird squatting over the door, and the sun at each side. While the former belongs to the G·ē′xsEm, the sun was obtained from the clan Q'ō′mk·utîs of the Goasi′la. Fig. 17 shows the house front of the clan G·ī′g·îlqam of the same tribe. The bears on each side of the door are the crest of this clan, which was obtained by their ancestor

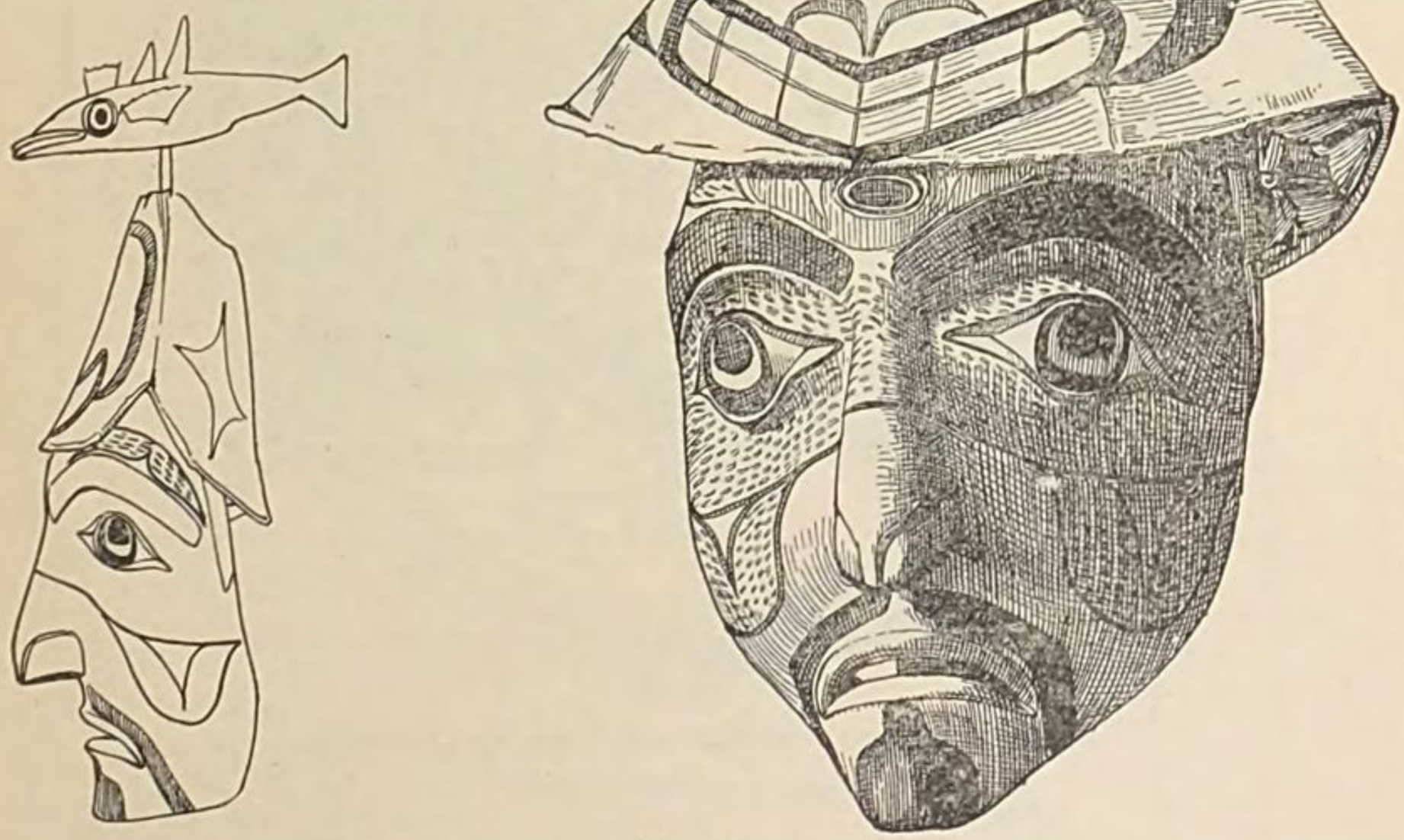


Fig. 15.

MASK REPRESENTING AIK·A'A′YŌLISĀNA.

The face is painted red and black; the hat is of muslin, with a painting on the front representing the sea monster ts'ē′qîc, one on the back representing a starfish, and another the feather of a thunder bird. The revolving carved figure on top represents a cod. Scale of front view, $\frac{1}{3}$

IV A, No. 6889, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

Kuē′xag·ila, the son of Hā′taqa. (See p. 374.) Around the door is the crest of the mother of the house owner, who belonged to the Goasi′la tribe. It represents the moon, G·ā′loyaqamē (=the very first one), and inside the ancestor of the clan, LE′lnakulag·ilak·as'ō, who was taken up to the moon by G·ā′loyaqamē. The feet of this figure are drawn like frog's feet, but I did not learn any particular reason for this fact. Fig. 18 shows the house front of the clan G·ī′g·îlqam of the Nimkish. It represents the

thunder bird lifting a whale, which is its food, from out of the water. According to the clan tradition, the G·ī′g·îlqam are the descendants of the thunder bird. This house front was excellently painted, but has been whitewashed, owing to the misplaced zeal of a missionary. The beak was carved and fastened to the house front. The owner had one of his coppers tied to the pole on top of the house. In fig. 20 is shown a house post which represents a sea lion. I was not able to learn to what clan it belongs. It is found in a house at Xumta′spē with the post shown in fig. 36, p. 414. The owner belongs to the clan G·ē′xsEm, of the Naqô′mg·ilisala. The carving is said to have come from Yā′qaL'nala (Hope Island), which is the territory of the La′Lasiqoala. When the Naqô′mg·ilisala moved to the present village of Newettee they brought it with them. Fig. 19, which represents a statue in a house at Xumta′spē, has a curious

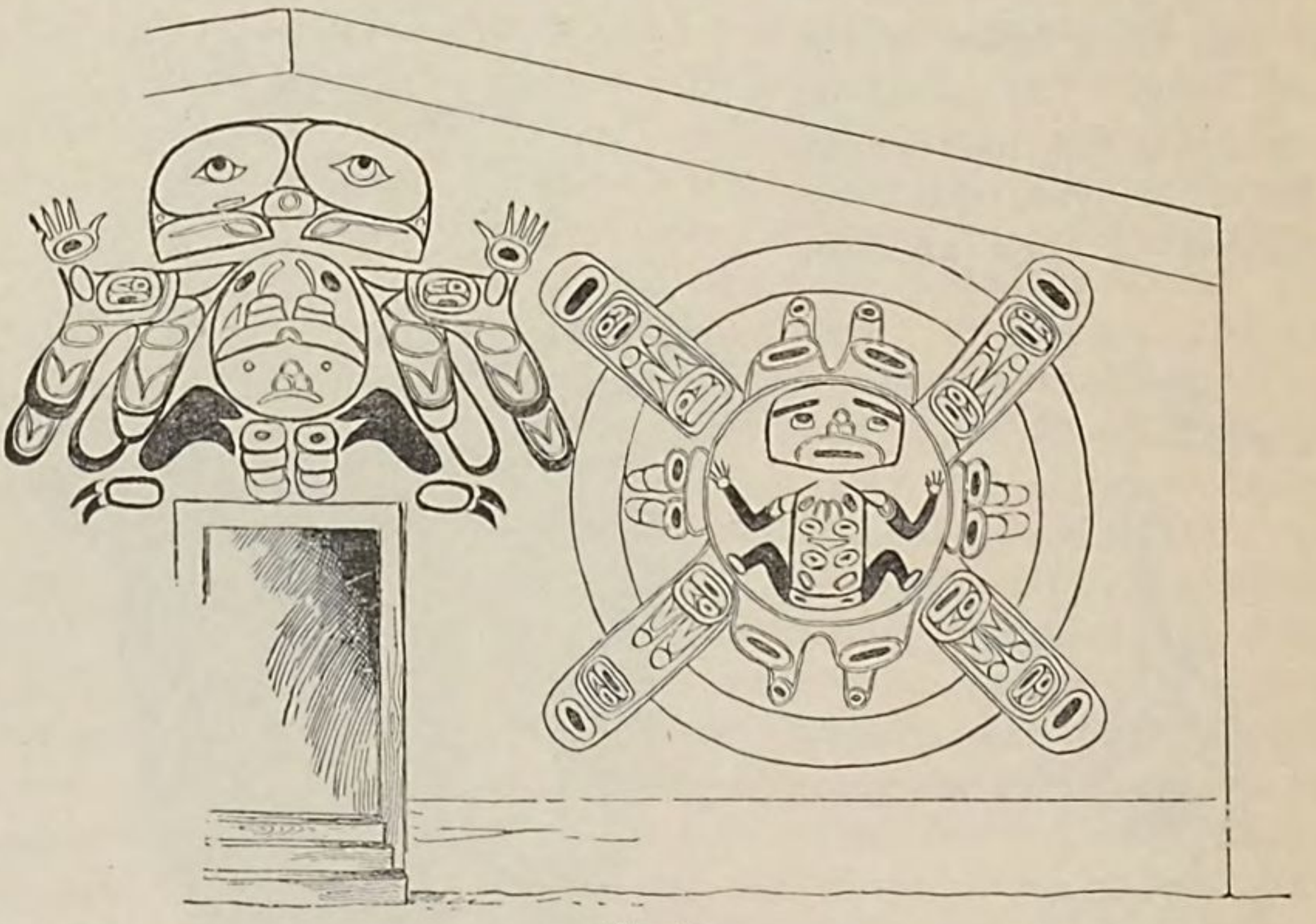


Fig. 16.

HOUSE FRONT OF THE CLAN G·Ē′XSEM, LA′LASIQOALA.

From a sketch by the author.

explanation. It belongs to the subdivision Mē′Emaqâaē (Mē′Emaqaua in the Naqô′mg·ilisala dialect) of the Naqô′mg·ilisala. These are the descendants of Lē′laxa (=coming often from above) the son of Q'ē′q'a-qaualîs, whose legend will be found below (p. 416). Their original home is the island G·ig·ē′LEm, one of the small islands southeast of Hope Island. LElā′k·En was a later chief of the clan. His daughter was Laō′noqumēqa. They moved to the island Q'oā′sqEmlîs and built a village. The chief made a statue like the one represented here. It is hollow behind and its mouth is open. In the potlatch the chief stands behind the mouth of the statue and speaks through it, thus indicating that it is his ancestor who is speaking. LElā′k·En had one dish representing a wolf, another one representing a man, and a third one in the

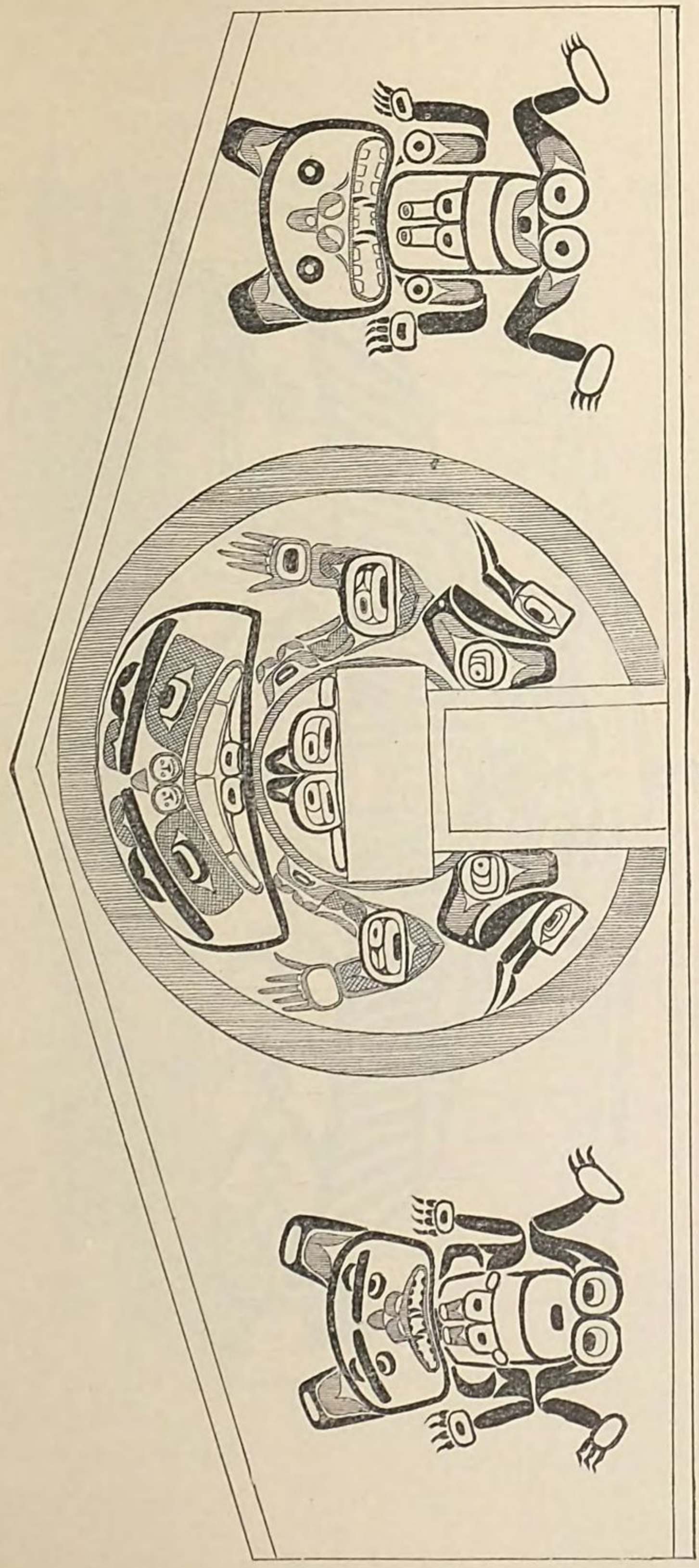


Fig. 17.

HOUSE FRONT OF THE CLAN G·Ī'G·ĪLQAM, LA'LASIQOALA.

From a sketch by the author.

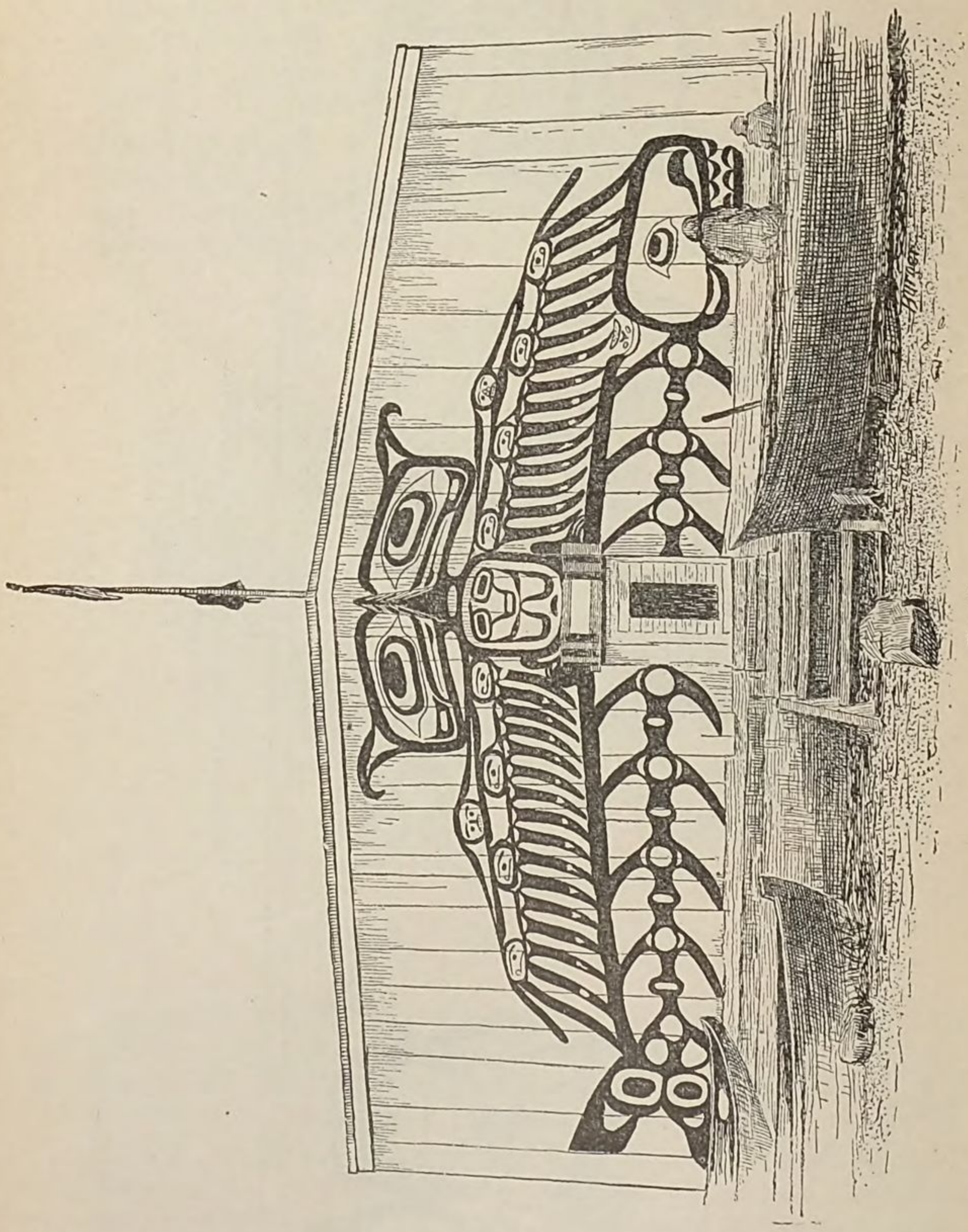
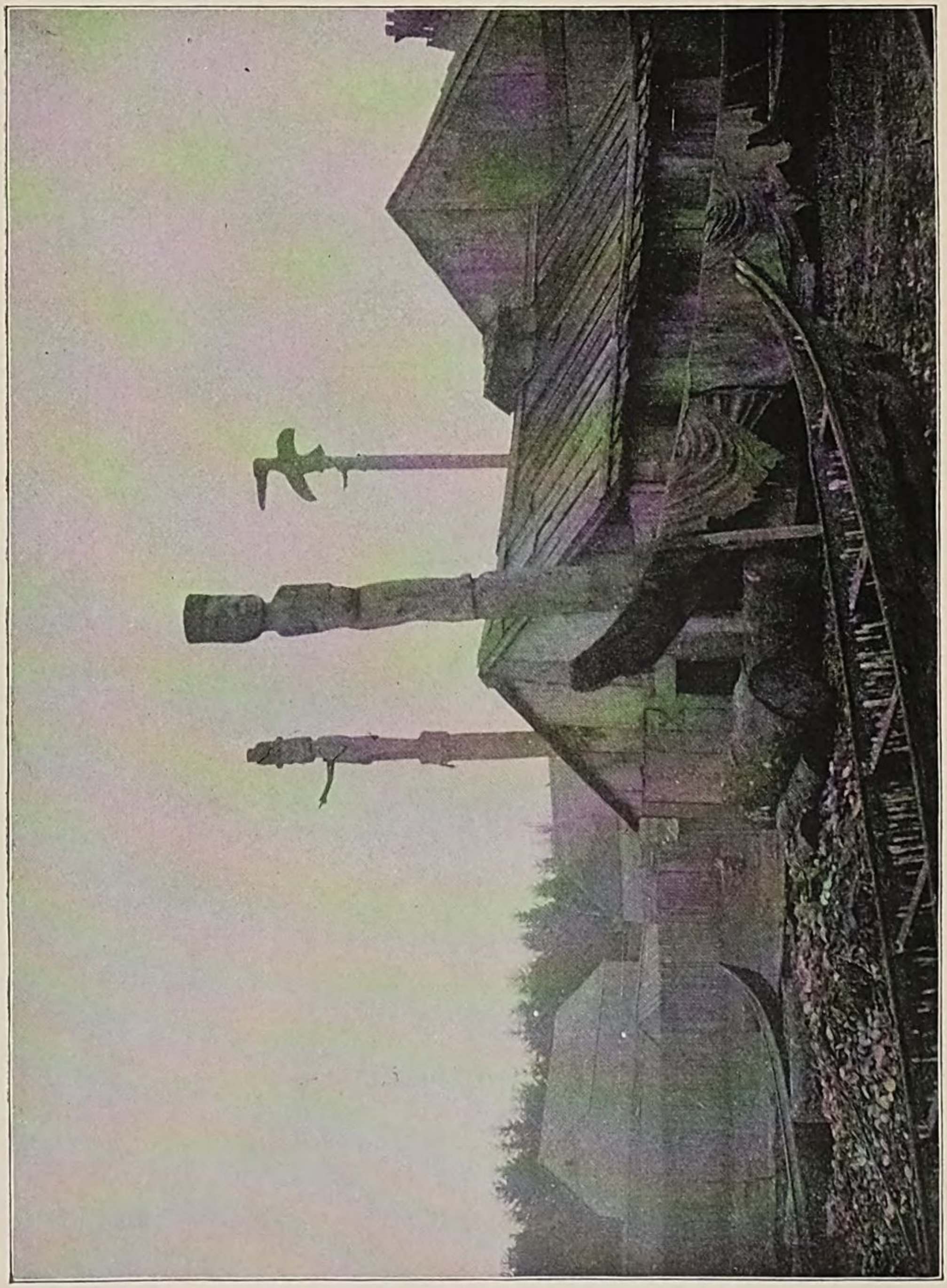


Fig. 18.

HOUSE FRONT OF THE CLAN G'I'G'ÎLQAM, NIMKISH.

From a photograph.



COLUMNS IN FORT RUPERT.
From a photograph.

shape of a bear. As the man who made the present statue was too poor to have all these carvings made, he had them carved on the statue instead.

Figure 21 represents a totem pole, which was standing until a few years ago in front of a house in Xumta'spē (Newettee). The crest belongs to the subdivision G·'ēk·'ō'tē of the clan G·ī'g·îlqam. According to the legend, these people are the descendants of G·'ōtē, the son of K·ēpusalaōqoa, the youngest daughter of Kuē'xag·ila, the son of Hātaqa, the daughter of Ō''meaL. (See p. 374.) They have the Ts'ō'noqoa, a man split in two, another man, wolf, beaver, and the sea monster ts'ē'qic for dishes. A man named NE'mqEmalîs married a daughter of the G·'ēg·'ō'tē chief, and he had all these dishes made. Later on, a man named Qoayō'LElas married NE'mqEmalîs's cousin. Then he was told to unite the dishes and to carve a totem pole. He did so. The second figure from below is placed upside down because the dish was in the back of the man, while all the others were in the bellies of the carvings. This history may also explain the fact that all the figures are separated on this column, while in most other totem poles they overlap, one holding the other or one standing on the other.

From the same clan was obtained the crane surmounting the speaker on the post farthest to the right on Plate 16.

The three posts in figs. 22 and 23 are the front and rear posts of the house Qoā'qoak·imlilas of the clan G·ē'xsEm of the Naqô'mg·ilisala. The posts

Fig. 19.

STATUE FROM HOUSE IN XUMTA'SPE.

From a sketch by the author.

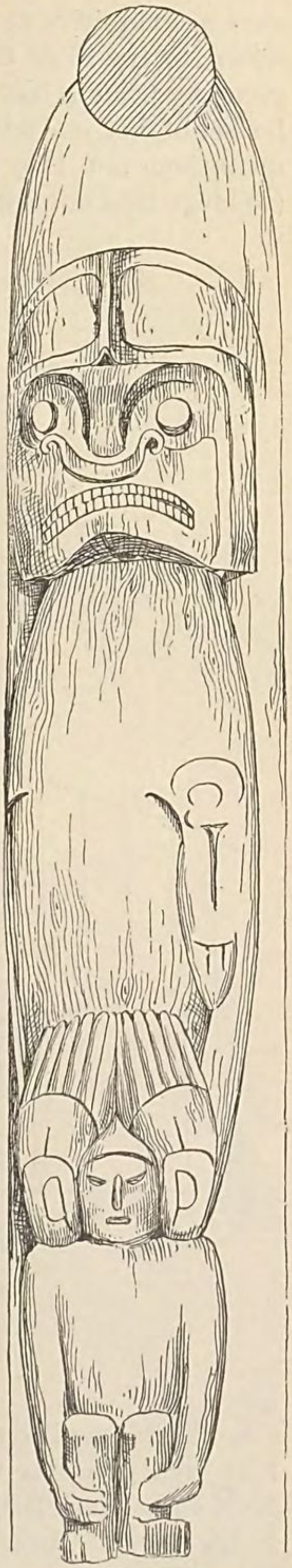


Fig. 20.

HOUSE POST REPRESENTING A SEA LION.

From a sketch by the author.

were on exhibition at the World's Columbian Exposition and were transferred to the Field Columbian Museum. The name of the house was given by Q'ā'nig·ilakᵘ, the great transformer, who, it is said, made two houses of dirt, one for himself, one for his brother NEmō'gwîs. He blew upon them and they grew large. He called the first Qoā'qoak·imlilas (so large that one can not look from one corner across to the other), the

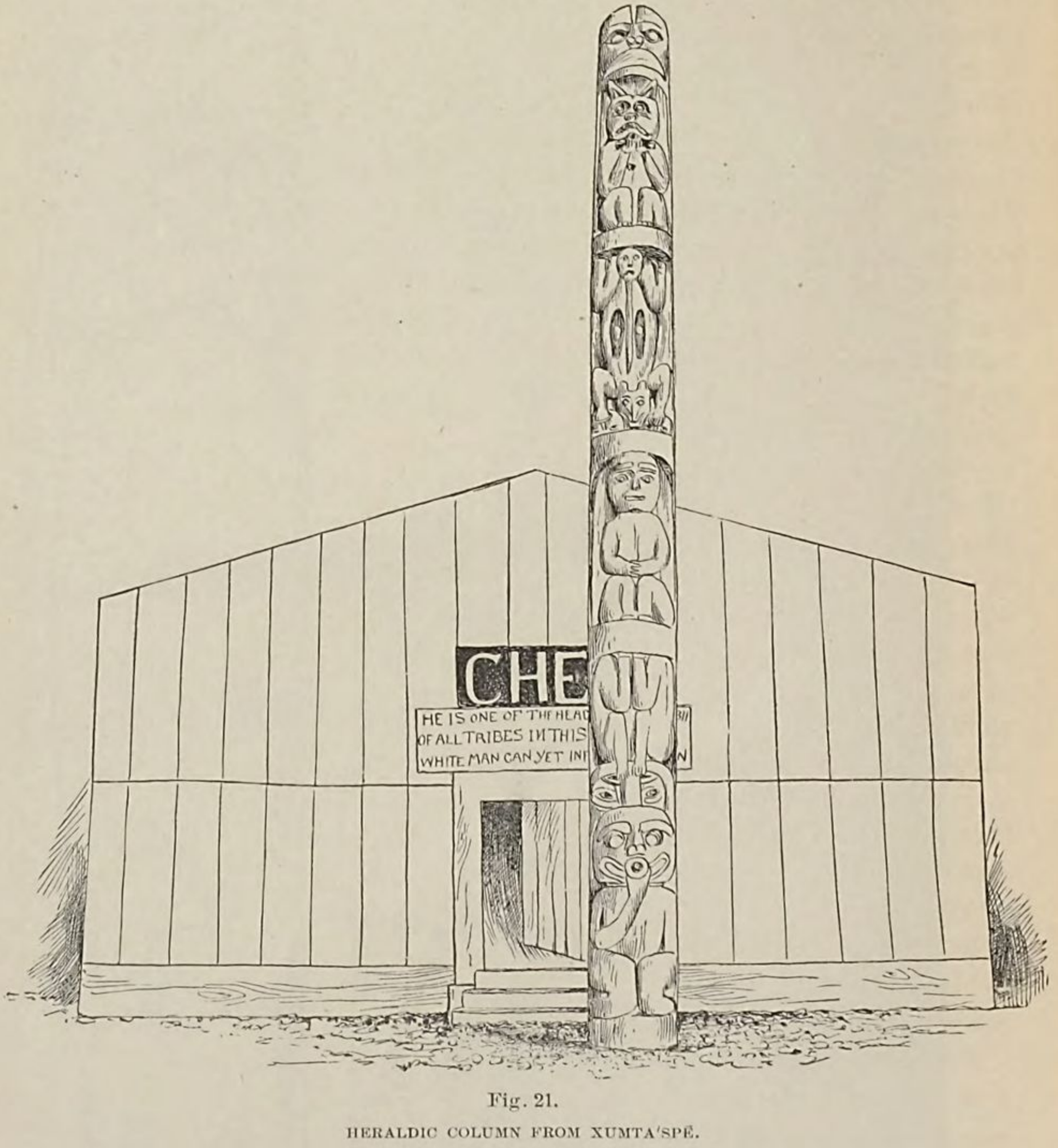
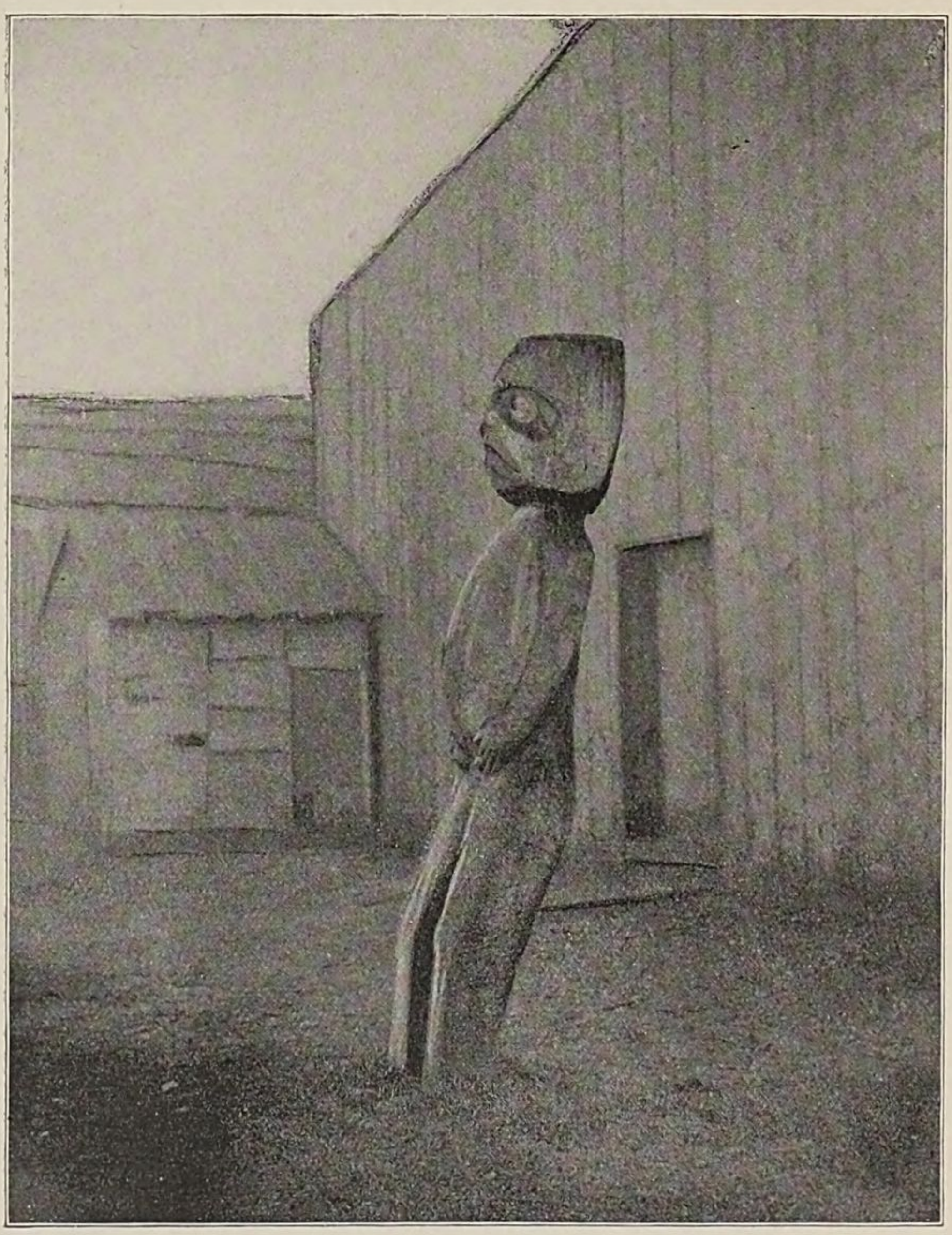


Fig. 21.

HERALDIC COLUMN FROM XUMTA'SPĒ.

From a sketch by the author.

other Yuibā'lag·ilîs (the wind blowing through it all the time). He carved four men of cedar wood, and called them T'ōxtowā'lîs, QāLqap'ālîs, K·'ētoqâlîs, and Bēbekumlisī'la. He made them alive and they lived in his house. Three of these men are represented on the posts. There was another post, on which the fourth one was carved, but it was so rotten that the owner of the house removed it. Post No. 1 (fig. 22) represents on top QāLqap'ālîs, below a Ts'ō'noqoa, which the owner

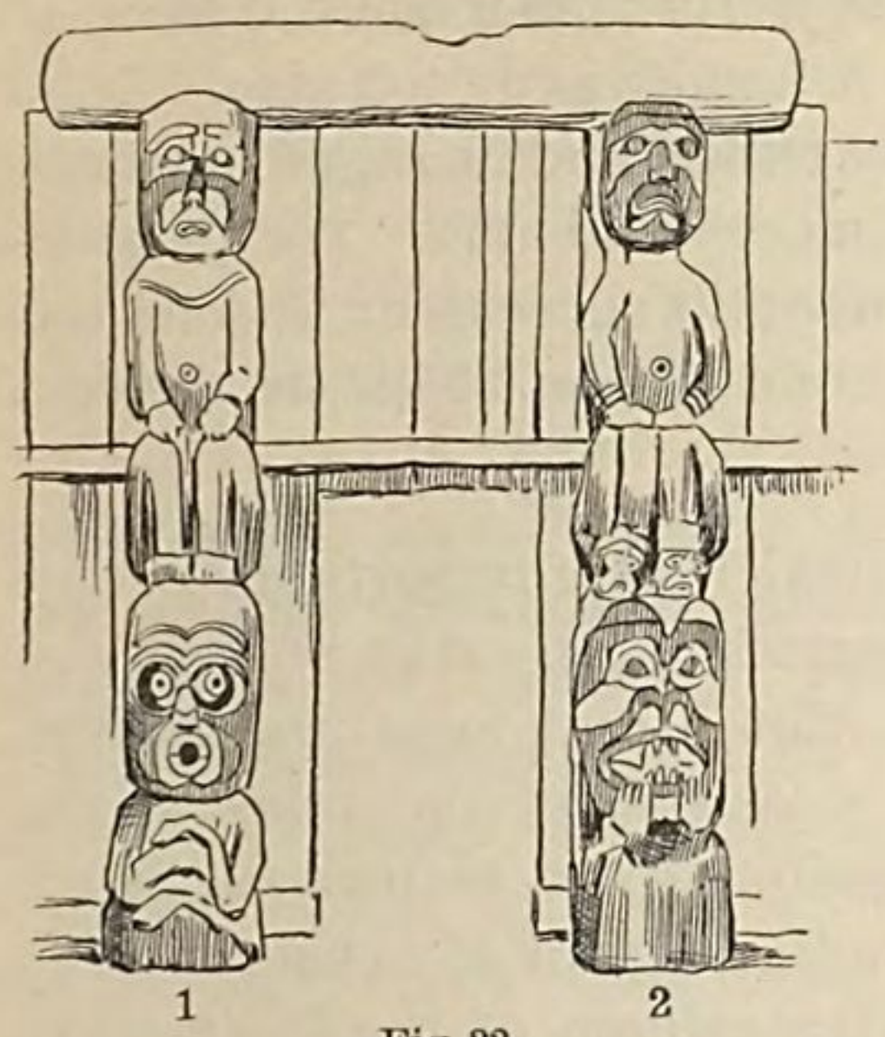


STATUE REPRESENTING THE KILLER WHALE.

Fort Rupert.

From a photograph.

had obtained from the G·ī′g·îlqam of the La′Lasiqoala, who have inherited it from Kuē′xag·ila. Post No. 2, of the same figure, shows K·’ētoqâ′lîs on top. The heads underneath represent two slaves which were sold for the post (ō’mā′yū), its price. The figure underneath is a bear (nān), which belongs to the clan La′lāuiLEla of the same tribe. Figure 23 shows the only preserved rear post in the same house. On top the figure of of Bēbekumlisī′la is seen. The bear underneath was obtained from the clan Kwā′kok·uL of the Nā′q’oaqtôq. The broken copper which it holds is the price paid for the post.



1 2

Fig. 22.

POSTS IN THE HOUSE OF THE CLAN G·Ē′XSEM, NAQÔ′MG·ILISALA.

From a sketch.

Plate 17 shows a wood carving which stands on the street of Fort Rupert. It represents the killer whale, a crest of the clan Lā′alaxsEnt’aiō.

A very characteristic tradition is that of the clan NūnEmasEqâlîs of the Lau′itsîs:

In the beginning NōmasE′nxēlîs lived at Â′g·iwa’laa, in front of Tsā′xis. He had a house there. His son was L’ā′qoag·īlaqEmaē. NōmasE′nxēlîs came up with his copper. It is said that in the beginning he lay on it with his knees drawn up, and therefore his child was called L’ā′qoag·īlaqEmaē. Then Yix·ā′qEmaē, NōmasE′nxelîs’s uncle, asked him to get a wife for him. Yix·ā′qEmaē lived at LîXsī′waē. He induced NōmasE′nxēlîs to come there and live with him. His son was to marry the daughter of Sâ′g·iyē. Yix·ā′qEmaē desired to have Sâ′g·iyē’s house and carvings, therefore he wanted to marry his daughter. A killer whale was the painting of the house front. Gulls were sitting on its roof. Various kinds of carvings were in the house. Then NōmasE′nxēlîs went out of the canoe to speak. He took his staff (fig. 24); therefore his staff has a hand on top of it, because he carried there on his hands the chief’s daughters of all the tribes. Then he got the daughter of Sâ′g·iyē. Only NōmasE′nxēlîs and Yix·ā′qEmaē lived in that house. Now, when it was time to go to Ts’ā′watē,[1] they made themselves ready. NōmasE′nxēlîs wanted to give a feast from the sale of his copper. They paddled and stopped at L’ā′qoaxstElîs. There he wanted to take a stone and put it into his house. They tried to take the stone into the canoe when they were

Fig. 23.

POST IN HOUSE OF THE CLAN G·Ē′XSEM, NAQÔ′MG·ILISALA.

From a sketch.

[1] Namely, to fish for oulachon.

going to Ts'ā'watē. They were not strong enough to take it. Then he put his copper under the stone. Therefore the stone received the name "copper under it." Then he said he had received the stone as price for his copper. Now they arrived at Ts'ā'wate. Then he used his staff with a copper on top. A hand was on top also. Then he gave a feast to many tribes, and changed his name and took the name Kuax·îlanō'kumē. L'ā'qoag·ilaqEmaē was now the name of his successor; Ts'âmâ was the name of another child of his. That is the end. (Appendix, p. 673.)

Fig. 24.

SPEAKER'S STAFF.

Two hollow pieces of cedar, filled with pebbles. Length, 62 inches.

IV A, No. 1127, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

There is one legend which is of importance in this connection, because the rank of the various names and the laws governing potlatch and feast are derived from it. I give here a version of the tale, which, however, is not quite complete and requires some additional remarks. It is the legend of Ō'maxt'ā'laLē, the clan legend of the G·ī'g·îlqam of the Q'ō'moyuē:

A bird was sitting on the beach at TE'ng·is. He took off his mask, and then his name was NEmō'gwîs. He became a man. Then he moved to K·'ā'qa. He had a son whom he named Ō'maxt'ā'laLē. The child grew up fast; he became a real man. He was very strong. He walked with his uncle LŌ'La'watsa on the beach of Tsā'xis and clubbed seals. They were walking back and fro clubbing seals. Then NEmō'gwîs spoke to his younger brother LŌ'La'watsa: "Friend, don't let us go on in this manner. Let us try to arrange that our son may go out to sea." He desired to have more game than the sea otters and seals which they were able to club on the beach of Tsā'xis. Therefore they wanted to go to the islands. Then NEmō'gwîs and his younger brother burnt the inside of a cedar and burnt its ends, thus making a canoe. They finished it. Then they launched the canoe that they had made for the child. They tried the canoe that the child was to use when going to Deer Island. O'maxt'ā'laLē was annoyed, and when he came back, his canoe was full of sea otters and seals. He kept on going out every day and caught many sea otters and seals. Then he said: "Let us try to discover how many tribes there are. Let someone go and call them." Then NEmō'gwîs's younger brother LŌ'La'watsa paddled. He was going to La'lā'tē to call Hai'alik·awaē. Then he arrived at Qag·'axstE'ls and called Mā'tag·i'la. He arrived at G·'ōtaqa'la and called

L'ā'xLaqoaXLa the Lau'itsis, who, it is said, was a man. He arrived at Sē'lats'ē and called Mā'leleqala. He moved on and came to Lā'L'aq'uxLa. There he called Ts'E'nXq'aiō. He arrived at Tā'yaxqōL and called Lā'laxsEnt'aiō. Then he went to the town at Q'ō'quē'taxsta'yō and called Wā'xap'alasō. Then he went up the bay to Â'g·iwa'ḷaa and called Nū'mas. Then he went up the Sound to LîXsī'waē and called Sâ'g·iyē. He came to XutsEtsâ'lis and called YîXā'qEmaē. Then he went to the right side of the river of LîXsī'waē and called SE'nLaē. Then he paddled to Ō's'eq and called Hē'ilik·inakula; then to Nā'laxLala near the mouth of Ts'ā'watē and called Yā'xLEn.

Meanwhile the child of Nemō'gwîs was clubbing and harpooning seals for his father's feast. His house was already full of sea otter furs, which were used for blankets by the people of old. They were sewed together. Now the tribes gathered. He met his guests and distributed seals among them. He gave them their seats and gave his gifts to the chiefs. Nemō'gwîs kept for them the belly part. He gave the hind legs to the chiefs of another tribe. He gave the flippers to the second-class chiefs, and the bodies to the common people. He gave each clan its place. He gave the bellies to the highest chief. He bit off these parts and had messengers to pass them on to his guests. It is said he bit off whatever he gave to his guests. Then he was called Wālas Nemō'gwîs and he called his successor Ō'maxt'ā'laLē. Then he gave out the blankets to all the clans, giving the law for later generations. Some of the guests stayed with him and became his tribe.

Now O'maxt'ā'laLē said to his father: "I shall go a little farther this time. Do not expect me; but first I will go bathing." Then Ō'maxt'ā'laLē went in the morning. After he had bathed he heard the sound of adzes. He made up his mind to look where the sound came from, because the sound was near when he first heard it. But it moved away as he followed it and Ō'maxt'ā'laLē came to a pond. He bathed again and the sound came still nearer. He followed the sound, which was going before him. He came to another pond and bathed again. Then the sound of adzes came still nearer. He followed it as it went before him. Now he found still another pond. He bathed, and the sound came still nearer. He went toward it and now he saw a canoe. A man was sitting in the canoe working on it with his adze. In the bow of the canoe lay a harpoon shaft and two paddles. Ō'maxt'ā'laLē stood behind the man. He was the grouse. Then Ō'maxt'ā'laLē spoke: "Thank you, that I have found what you are working on." The grouse looked at him and disappeared. Thus Ō'maxt'ā'laLē found the canoe, the harpoon shaft, and the paddle.

Then he put his nettle line into his canoe. He and his uncle L'ō'L'awatsa went out. He went across the Sound trying to reach Noomas Island. Then he saw a canoe coming from YaaiXugiwanō. They met at Noomas Island, and held the sides of each other's canoe.

"Good day, brother," said O'maxt'ā'laLē to Qā'watiliqala, "I do not come without purpose. My father sent me, because you are the only one whose daughter I will marry." Qā'watiliqala replied: "Paddle behind me and follow me to my house." Ō'maxt'ā'laLē said: "I will give you my harpoon line, friend, my nettle line, my harpoon shaft, and my mat." Qā'watiliqala then gave his leather line to his brother and they exchanged their canoes and everything in the canoes that they used. Then Ō'maxt'ā'laLē said: "Let us go back. That smoke belongs to our house." "No," replied Qā'watiliqala, "Let us go on to my house. You said you wanted to be engaged to my daughter." Then the two paddled side by side together. They reached the lower part of the river at Gua'ē. "Take care, brother, when we enter my house. When we enter my house, follow close on my heels," said Qā'watiliqala. He told his brother that the door of his house was dangerous. They walked up to the door together. The door had the shape of a raven. It opened and they jumped in and the raven snapped at him. All the images in Qā'watiliqala's house were alive, the posts were alive, and the sī'siuL beams. Then Ō'maxt'ā'laLē married Wilx·stasīlayuqoa, the daughter of Qā'watiliqala. The house and the images and all kinds of food were given him in marriage, and blankets of lynx, marmot, wolverine, mink, and dressed elk skins. Then his father-in law and his tribe brought him home. They brought everything, also the house. He built a house at K·'ā'qa. That is why the place is called K·'ā'qa, because logs were placed all around for the foundation of the house which he had obtained in marriage. Then Omaxt'ā'laLē invited all the tribes with what he had obtained in marriage from his wife. (See Appendix p. 675.)

In the feast referred to in the preceding legend NEmō'gwîs is said to have given each of his guests his seat, which their descendants have retained. He also arranged how the parts of the seal with which he fed his guests were to be distributed. The chest was given to the head chief, the next in rank received the hind flippers, and the young men of the nobility the fore flippers. He also instituted at the feast the laws according to which blankets are given away and returned later on.

This legend is so important that I will give another version which I obtained at Fort Rupert:

NEmō'gwîs lived in a village at Wēkawāyaas. He was the ancestor of the G·ī'g·îlqam of the Q'ō'mōyuē. He wore the sun mask on his face. He had a slave named ŦŌ'Ŧatsa and had a boy. This son was growing up quickly and he came to be a man. Now NEmō'gwîs took a walk and saw a village at Tā'yaguL. There he saw a man who wore a bird mask sitting on the ground. The mask had a small hooked nose. Then NEmō'gwîs spoke to him: "O brother! thank you for meeting me here. Who are you?" The other one replied, "I am Ts'E'nXqaiō, brother." Then NEmō'gwîs asked Ts'E'nXqaiō: "Who is living in the house beyond?" Ts'E'nXqaio replied: "I do not know him." NEmō'gwîs walked on to the east end of Tā'yaguL, where the other house was

standing. He discovered an old man sitting outside the house. He wore a bird mask. NEmō'gwîs spoke: "O, brother! thank you for meeting me here. Who are you?" The old man replied: "I am Lā'laX-sEnt'aiō." Then NEmō'gwîs asked him: "Who is living in the house at the river?" Lā'laXsEnt'aiō replied: "I do not know him." Then NEmō'gwîs walked on and arrived at Tsā'xis. There he beheld a man sitting on the summer seat outside the house, and NEmō'gwîs spoke to him and said: "O, brother! thank you for meeting me here. Who are you?" The man replied at once: "I am Kuax·ilanō'kumē and my tribe are the G·ī'g·îlqam." And he asked NEmō'gwîs: "Who are you, brother? Where is your village?" NEmō'gwîs replied: "I am NEmō'-gwîs. My younger brother is Bō'nakwala. We and my son, we three, live in my village, Wēkawāyaas." Then spoke Kuax·ilanō'kumē: "Thank you, brother, for meeting me here." And NEmō'gwîs went home to Wēkawāyaas. When he arrived there, he told his younger brother and his son what he had seen.

He spoke to his son: "O, child, see the sea otters, the seals, and the sea lions on Shell Island." Then his son wanted to go there. Bō'na-kwala and ʇo'ʇatsa rolled a drift log into the water. The son of NEmō'-gwîs was to use it in place of a canoe. They brought it to the beach in front of NEmō'gwîs's house and showed it to the young man. He sat on top of it and went to the island in order to club sea otters and seals. When he arrived at the island he began clubbing the sea otters and seals. He finished, and put them on his drift log. Then he went home. Bō'nakwala and ʇo'ʇatsa met him on the beach and they unloaded the log. NEmō'gwîs spoke: "O, child, now your name is Ō'maxt'ā'laLē on account of your game." He invited Ts'E'nXqaio and Lā'laXsEnt'aiō and Kuax·ilanō'kumē and Mā'tag·ila. The four men came to the house and sat down. Then Bō'nakwala put stones into the fire and singed the seal. When he had done so, he cut it up. He filled the kettle with water and then threw the red-hot stones into the water until it began to boil. Then he put the pieces of seal meat into the boiling water and added more red-hot stones. After a short while the seal was done. Bō'nakwala took the meat out of the water, and NEmō'gwîs took the breast piece first. He bit it and gave it to Ts'E'nXqaiō, saying: "You shall always be the first one to receive his share, and you shall always have the breast piece." Next he took the hind leg and gave it to Kuax·ilanō'kumē, saying: "You shall always have this piece, and it shall be given to you next to Ts'E'nXqaiō." Then he took up the foreleg of the seal, bit it, and gave it to Mā'tag·ila, saying: "You shall always have this piece." Then he gave a whole seal to Ts'EnXqaiō, Kuax·ilanō'kumē, and Mā'tag·ila, and told them the name of his son. He said: "I invited you to show you my son. This is O'maxt'ā'laLē." Bō'nakwala now addressed the guests. Therefore the people nowa-days make speeches in their feasts, because NEmō'gwîs began making speeches and distributing blankets and canoes among all the tribes.

After the feast they all left the house. Bō′nakwala looked for a good log of cedar wood. He found one and brought it to the beach in front of NEmō′guîs's house. When the tide had fallen, he burnt its ends and the middle, thus hollowing it out. It was to be the canoe of Ō'maxt'ā′-laLē. As soon as it was completed, he gave it to O'maxt'ā′laLē. The latter went at once to Shell Island and clubbed sea otters. He did not club any hair seals. When he came home, Bō′nakwala and ʇo′ʇatsa skinned the sea otters. Then Bō′nakwala spoke: "O, child! Ō'maxt'-ā′laLē! I will go now. Do not feel uneasy if I should stay away long." O'maxt'ā′laLe replied: "Go on, but take good care of yourself." His uncle Bō′nakwala went and came to Gā′yux. At night he bathed in water and rubbed his body with hemlock branches. On the following morning he went on and heard the sound of an adze close to where he was. He went up to the sound. Then it stopped, and reappeared a long ways off. Then Bō′nakwala went again, and bathed in the water and rubbed his body with hemlock branches. He went on and again he heard the sound of an adze near by. He went to see what it was, and again the sound stopped and reappeared a long ways off. He went at once to the water and bathed again and rubbed his body with hemlock branches. He went on and heard again the sound of an adze near by. When he went up to the sound it stopped, and reappeared a long ways off. Again he bathed and rubbed his body with hemlock branches. When he had finished, he went on and suddenly he beheld a pretty hunting canoe lying on the ground. He went up to it and pushed it into the water, into the river of Gā′yux. He went in it down the river. In the canoe were two paddles and a harpoon. He rested at the mouth of the river and then paddled home to Wēkawāyaas. When he arrived at the beach of NEmō′gwîs's house, O'maxt'ā′laLē came down to meet him. Then Bō′nakwala spoke: "O, child, I obtained a canoe for you." Ō'maxt'ā′laLē made ready at once to go to Shell Island and asked the slave ʇo′ʇatsa to steer the canoe. They started, and when they arrived at Shell Island, Ō'maxt'ā′laLē clubbed the sea otters. Then he loaded his canoe, which was full of sea otters. When they were going home, the slave said: "O, master, let me see how you spear a sea otter with your harpoon." Then Ō'maxt'ā′laLē said: "Steer toward that sea otter and I will spear it." The slave turned the bow of the canoe toward the sea otter and O'maxt'ā′laLē threw and hit it. Then they returned home. When they arrived at the beach, Bō′na-kwala came to meet them. They unloaded the canoe, and Bō′nakwala and ʇo′ʇatsa skinned the sea otters and stretched the skins. After that they ate. Then Ō'maxt'ā′laLē spoke: "O, father! I will go and see who lives east of us." NEmō′gwîs replied: "Child, beware of storms when you cross the sea. Go, and take ʇo′ʇatsa along." Early the next day O'maxt'ā′laLē and ʇo′ʇatsa started. They spread the sea-otter skins over the bottom of their canoe and paddled straight across to the north end of the island at the mouth of Knight Inlet.

When he approached YaaiXugiwanō, he saw a canoe with two men coming up. O'maxt'ā'laLē paddled toward this canoe. When the canoes were side by side, the men took hold of each other's gunwale and Ō'maxt'ā'laLē said: "Where are you going, brother?" The one in the bow of the other canoe replied: "Brother, I am hunting among these islands here. I thank you for meeting me here. I am Qā'watiliqala. Who are you, brother?" O'maxt'ā'laLē replied: "Thank you, brother, for meeting me here. I am Ō'maxt'ā'laLē. Let us go to my house, the smoke of which we see there on the other side. It is not far. Come, take my canoe; it is yours now." Then Qā'watiliqala spoke: "Brother, now this my canoe is yours and everything that is in it." He meant the mountain goat skins with which it was covered and his harpoon. But Ō'maxt'ā'laLē's canoe was all covered with sea-otter skins. His blanket was made of sea otter and his harpoon line of the guts of the sea lion, while Qā'watiliqala's line was of cedar bark and his blanket made of mountain goat skin. Ō'maxt'ā'laLē spoke: "Thank you, brother. Now come across to your canoe and let me go into the canoe you gave me." Qā'watiliqala arose and went into Ō'maxt'ā'laLē's canoe, and Ō'maxt'ā'laLē arose and went into Qā'watiliqala's canoe. This was as though they had exchanged their hearts so that they had only one heart now.

Then Qā'watiliqala spoke: "That is done. Now, brother, come to my house. It is beyond this point." They paddled on, and when they had nearly reached Qā'watiliqala's house, he said: "Brother, take care. When I jump into my house, you and your slave must jump in at the same time." Now they arrived at the beach in front of the house of Qā'watiliqala. They went ashore and walked up to the house. When they arrived in front of the house, the mouth of the door of Qā'watiliqala's house opened. They jumped in all at the same time and it bit only a corner of Lo'Latsa's blanket. Then the posts at the sides of the door spoke, and the one to the right-hand side said: "You made them come to your house, Qā'watiliqala;" and the post on the left-hand side said: "Now spread a mat and give your guests to eat, Chief." It is said that the cross-beams over the rear posts were double-headed snakes (sī'siuL), which were constantly playing with their tongues. The posts in the rear of the house were wolves, and a grizzly bear was under each of the wolves. Carved images were all round the house. O'maxt'ā'laL and Lo'Latsa were sitting in the house and were given mountain goat meat to eat. When they had finished eating, the speaker of the house said: "What do you want here?" Now O'maxt'ā'laLē beheld the daughter of Qā'watiliqala, who was sitting in the rear of the house. He thought: "I will say that I came to marry her." Then the thought hearer of the house spoke: "Chief Ō'maxt'ā'laLē came to marry Qā'watiliqala's princess." Qā'watiliqala said at once: "O, brother! thank you that you want to marry my daughter. It has been my desire that you should marry her, brother Ō'maxt'ā'laLē. Now you marry my princess and you shall have this house for your house as a gift from your

wife and the great wolf dance Walas'axa'.[1] Its names are G·alg·ayalîs and G·alqEmalîs and QEmō'ta'yalîs and QEmōtilelag·ilîs, and your summer names will be NEg·ē' and Neg·ē'ts'ē and Qoaxō'L and G·'īg'ESLEn. The great dance Walas'axa' has forty songs. You will use this house for the celebration of the winter ceremonial, my son-in-law. That is all." Thus spoke Qā'watiliqala to O'maxt'ā'laLē. The latter replied: "Thank you, Chief Qā'watiliqala. I am glad on account of your speech, father-in-law. Now teach me the songs of the dance Walas'axa', for I will at once invite all the tribes when I reach home." Thus spoke O'maxt'ā'-laLē.

The speaker of the house said: "O, Chief Qā'watiliqala! Let us have the winter ceremonial to-night, that our son-in-law may see our ways." Qā'watiliqala answered: "My speaker, your advice is good," and, turning to the wolf posts of the house, he continued: "Now take care, friends, you, QEmō'ta'yalîs, and you, QEmōtilElag·ilîs. Howl, that our friends G·alalaLila and his children may come." When he had finished, Ō'maxt'ā'laLē said: "O, father-in-law! I now invite you and your tribe to bring my house, myself, and my wife to my place. I can not withstand your words, father-in-law! I say, thank you! Now let me watch your supernatural dances to-night, else I shall not know what you are doing in this great dance."

At night the speaker of the house said: "Now, magicians, howl! that G·alalaLila and his children may come." Then QEmō'ta'yalîs and QEmōtilElag·ilîs, the posts of the house, howled four times each. At once a howl like theirs was heard back of the house. Then Qā'watiliqala called his tribe, the ancestors of the Ts'ā'watEēnôx. They entered their chief's house, and as soon as they had assembled the wolves came in. All the men cried: "Yīhīī, hū, hū, hū, hū, hū!" Four times they did so, and then they sang:

I.

1. He was made to sit between the wolves, hāi.
2. He was taken around the world by Lālîstālaqa, the wolf, hāi.

II.

For four years I was coming home. Then Mā't'Em took me away.

III.

1. My poor younger brother, ɬāɬukuēdanuLas, who lives on the other side, lies ihī a, for you said long ago that he was the first to show the wolf dance, my younger brother, ɬāɬukuēdanuLas, who lives on the other side, i hayo īhī, iyihō ō, ihī, iyihō, ō iyi, hayō, ō, ihī, iyihō, ō, iyī, ihī, iyihō, ō.
2. My poor younger brother ƍamtalaL the T'Ena'xtax, lies, ihī a, for you said that long ago he was the first to show the wolf dance, my younger brother, ƍamtalaL the T'Ena'xtax, i hayō ihī, iyihō ō, ihī, iyihō, ō iyī, hayō, ō, ihī, iyihō, ō, iyī, iyihō, ō.

IV.

1. Come, come, come, come and make love to the son of the wolf! Come! yīhī, yīhī, ī ī, wō ō ō ō ō ō.
2. LēLatalaēnôx, the wolf, has been all around the right-hand side of the world.

[1] See page 477.

These are all the songs I know. If you will go to the Ts'ā'watEēnôx you can learn all the forty songs of the Wālas'axa'.

When the dance of the wolves was at an end, Qā'watiliqala said: "O, friends, I invited you, my tribe, that you may know that I give my daughter in marriage to O'maxt'ā'laLē, chief of the G·ī'g·îlqam on the other side. Now let us go and take our son-in-law, his wife, and his house home. And he shall take this great dance. Let us go to-morrow!" Then the people left the house and the next day they made ready to start. They went across, taking the house and Qa'watiliqala's daughter. They stopped at Gạ̄'yuX. They built a foundation of drift logs. In four days they finished the house.

Then Ō'maxt'ā'laLē went to tell his father NEmō'gwîs. He entered the house and said: "Come, father! let us go to my house at Gā'yux. I have married the daughter of Qā'watiliqala. I brought my father-in-law and his tribe, and also the house and the great dance Wālas'-axa', and a great box and three baskets. I do not know what is in them." NEmō'gwîs replied: "Let us invite Ts'E'nXqaio and Lā'laX-sEnt'aiō and Kuax·ilanō'kumaē, that they may see your house." And he sent Bō'nakwala to invite the tribes. Then O'maxt'ā'laLē and his father went, and O'maxt'ā'laLē said: "Take care, father! As soon as I jump through the door of my house you jump with me." When they arrived at the house, the mouth of the door opened and the father and son jumped in. Then the posts said: "Go on! greet them who come into your house, Chief!" NEmō'gwîs spoke: "Welcome, Brother Qā'wa-tiliqala. I have heard about you. I thank you for having given your daughter and your house to my son." Qā'watiliqala replied: "O, brother, I am glad that I have seen you. From now on your name will be Great NEmō'gwîs (Wā'las NEmō'gwîs). This box filled with curried skin blankets is for you, and the basket filled with marten skins, the one filled with mink skins, and this one filled with lynx blankets." Then Ō'maxt'ā'laLe left his house, because he heard men speaking outside. He saw his uncle Bō'nakwala and the guests whom he had invited. Then Ō'maxt'ā'laLe said: "Now let us jump into my house all at the same time." When they were all ready, the door opened and they all jumped in. Then the posts spoke: "Go on! greet them who come into your house, Chief!" The guests sat down, and were given to eat. When they had finished, they performed the winter ceremonial. Ō'maxt'ā'laLe showed the Wālas'axa'. Afterwards he gave sea otters to Qā'watiliqala's tribe, and he gave blankets made of curried leather, marten blankets, mink blankets, and lynx blankets to Ts'E'nXqaiō, Lā'laxsEnt'aiō, and Kuax·ilanō'kumaē. His winter dance lasted four days. He was the first who gave away blankets to all the tribes, and who gave a seal feast. That is the end.

Before leaving this subject I must mention that all the clans authenticate the claim to their rank and to the greatness of their ancestor by telling of a meeting between him and one of the two deities which prevail in the mythology of these tribes, Q'ā'nig·ilakᵘ in the Newettee

group, and Kuēkuaxā′oē among the other tribes. The Lā′lauiLEla of the La′Lasiqoala, for instance, say that their ancestor, NōmasE′nxēlîs, knew that Q'ā′nig·ilakᵘ was coming. Then he told his son LExx·a′lix·ila'yu to go to Xu′spalîs (Newettee Bar) and there to await Q'ā′nig·ilakᵘ's arrival. He himself remained, and was transformed by Q'ā′nig·ilakᵘ into a stone, which may still be seen on Hope Island. LExx·a′lix·ila'yu went to Xu′spalîs, but Q'ā′nig·ilakᵘ did not molest him, because he was afraid of him.

The G·ī′g·îlqam of the same tribe say that he met O″meāL, who pointed his forefinger at him when he saw him coming. At once his head was perforated. Q'ā′nig·ilakᵘ retaliated, and they saw that they were equally strong.

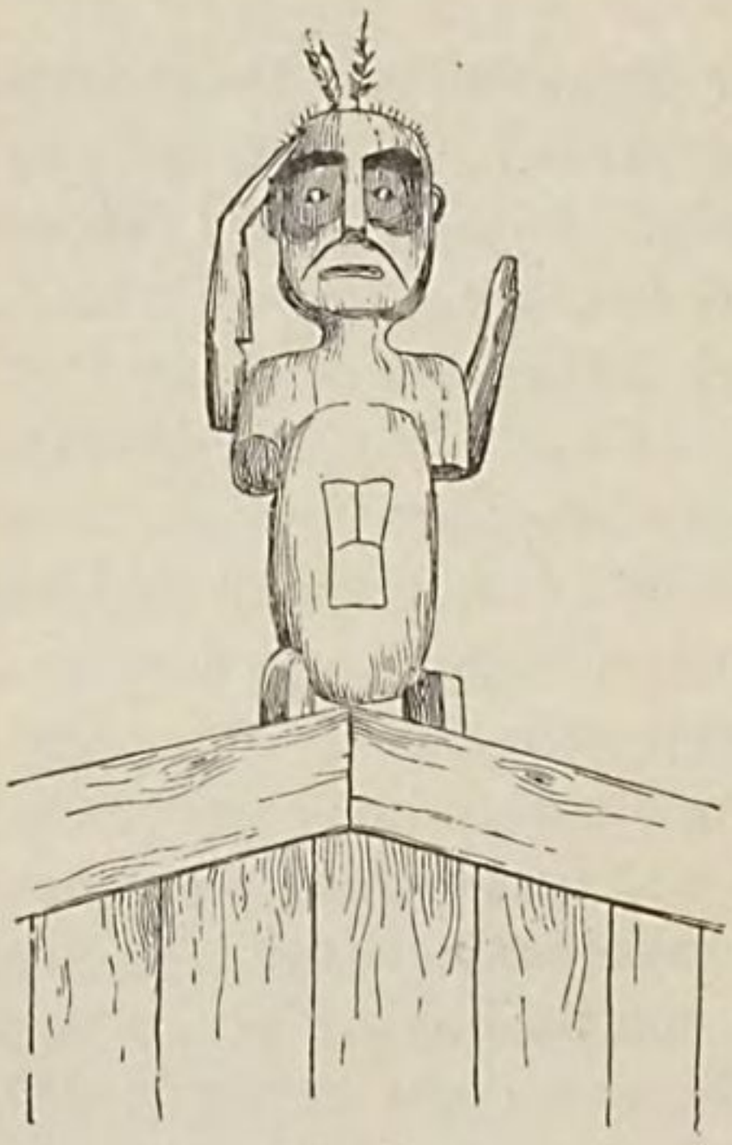


Fig. 25.

STATUE OF SPEAKRR TALKING TO THE PEOPLE.

Alert Bay.

From a sketch by the author.

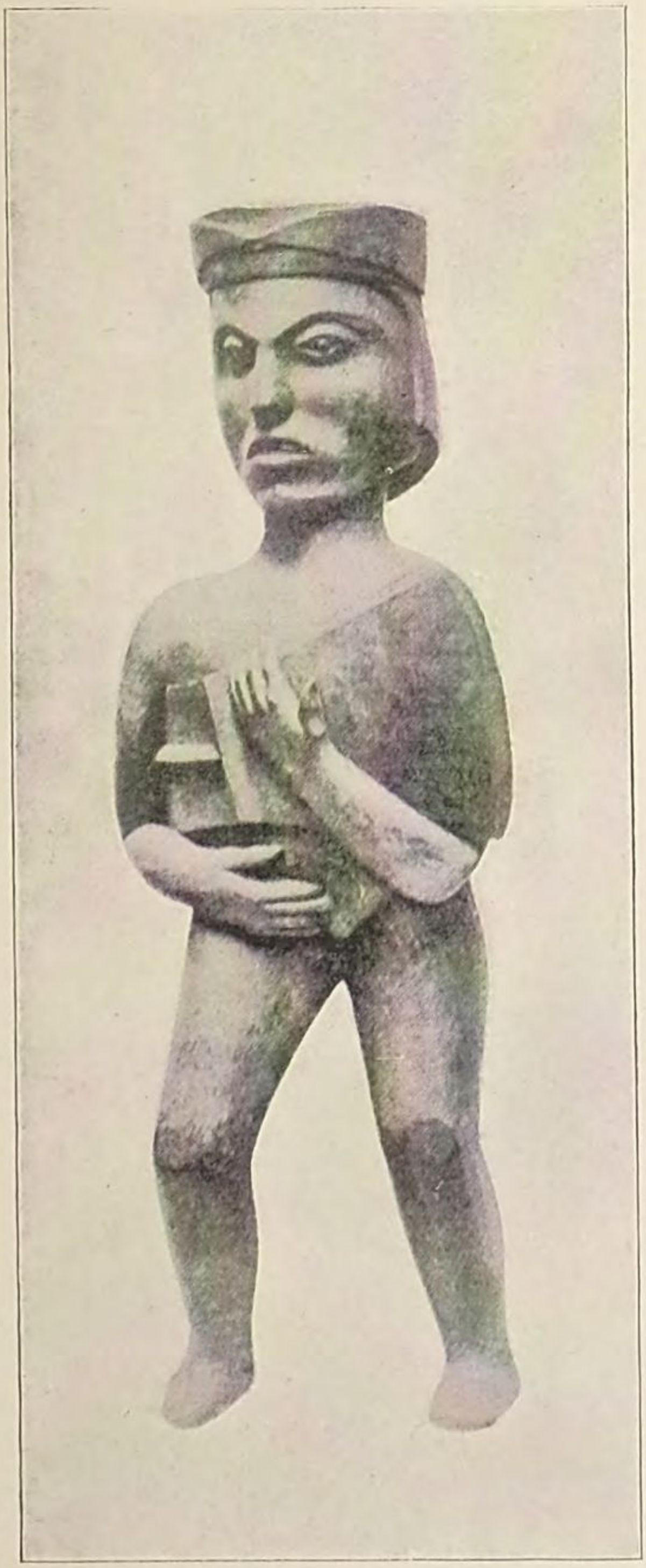
I do not need to enter into these legends any farther, because they are all of the same character and are merely intended to show that the ancestors of these clans were present at the time of the transformation of men into animals, and that they were as strong as the deity himself. For the details of the Q'ā′nig·ilakᵘ legend I refer to my book.[1]

With this I will leave the clan legends and their connection with the crest and the potlatch. Incidentally I will mention here that figures commemorating distributions of property, the breaking of coppers, and grease feasts are often placed on top of the house or on the poles. To this class belongs the statue of the speaker under the sun mask (fig. 1, p. 338), and the speaker on top of a house in Alert Bay (fig. 25). Other statues of the same class are shown in Plate 18, representing a chief who gives away coppers in a feast, and Plate 19, representing a chief breaking a copper. This last figure is placed on top of the house at the time when the father-in-law refunds the purchase money with which his daughter has been bought.

In order to convey a better idea of the arrangement of the whole village, I give here a sketch of the village of Newettee as it appeared in 1886 from a sketch taken by myself at that time (fig. 26). The names printed in Roman letters designate the names of the houses, those in Italics names of mountains on Galiano Island, and the one in Italic capitals is the name of the bay. The house Wā′tsuxūioa will be recognized as fig. 17 (p. 377). The post in front of it is shown in fig. 21 (p. 380).

I have referred several times to the fact that the clans also have peculiar carvings which are used as dishes. A few of these are represented on Plates 20 and 21 and in figs. 27–34. The dish shown in the upper figure of Plate 20 represents the Ts'ō′noqoa (see figs. 13 and 14,

[1] "Indianische Sagen von der Nord-Pacifischen Küste," Berlin, 1895, p. 194."



STATUE OF CHIEF SELLING A COPPER.

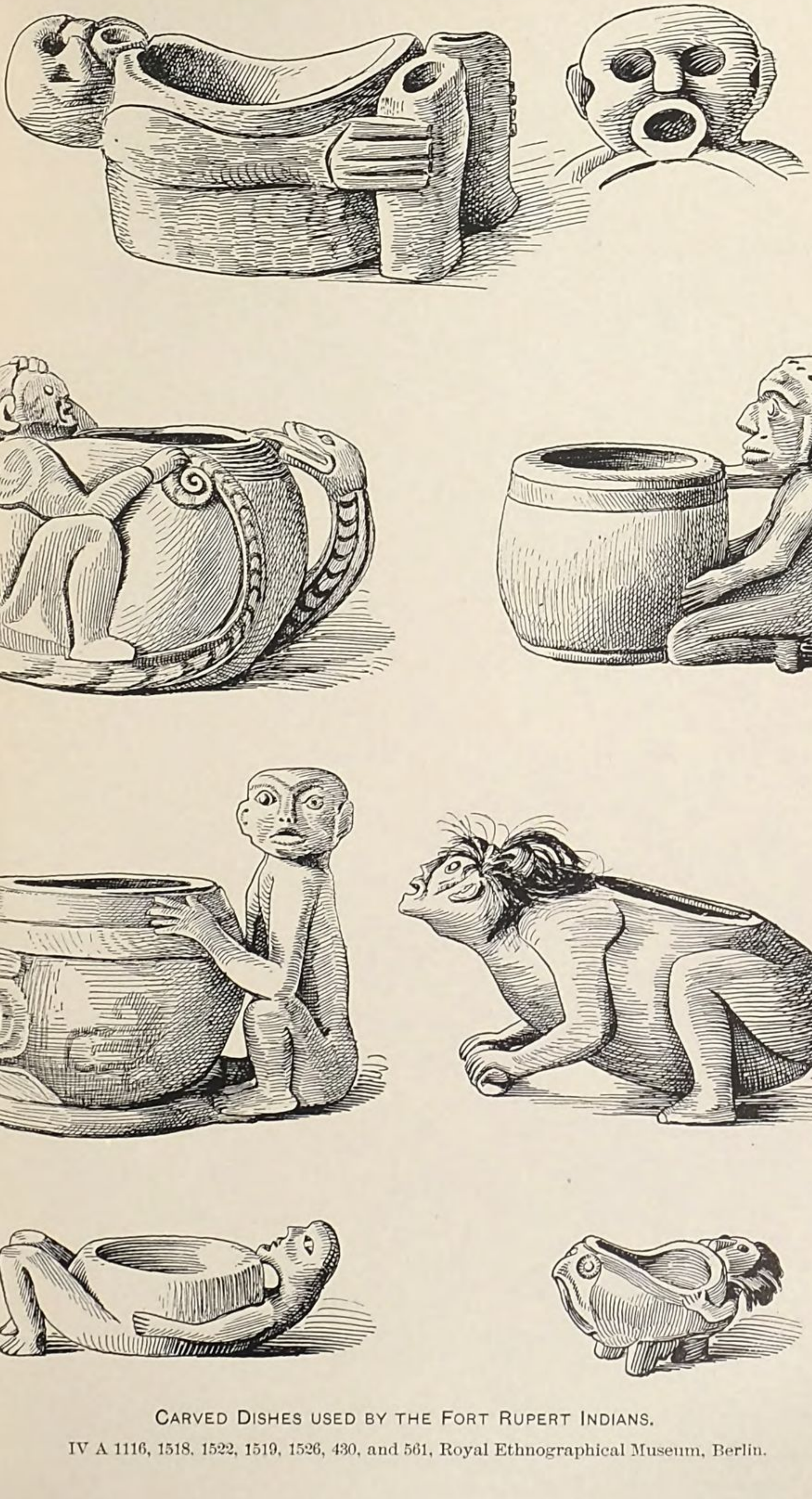
From A. Bastian, "Northwest Coast of America."

Original in Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

STATUE OF CHIEF BREAKING A COPPER.

From A. Bastian, "Northwest Coast of America."

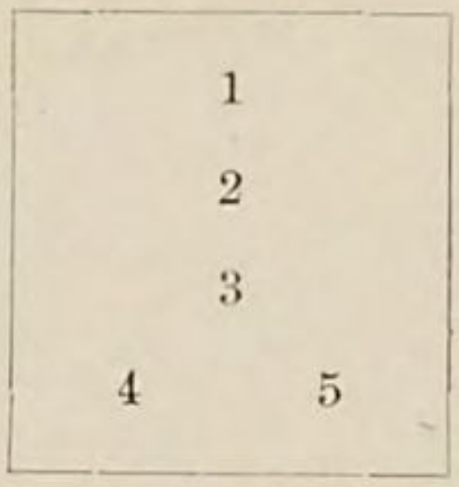
Original in Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.



CARVED DISHES USED BY THE FORT RUPERT INDIANS.

IV A 1116, 1518, 1522, 1519, 1526, 430, and 561, Royal Ethnographical Museum, Berlin.

EXPLANATION OF PLATE 21.



CARVED DISHES OF THE FORT RUPERT INDIANS.

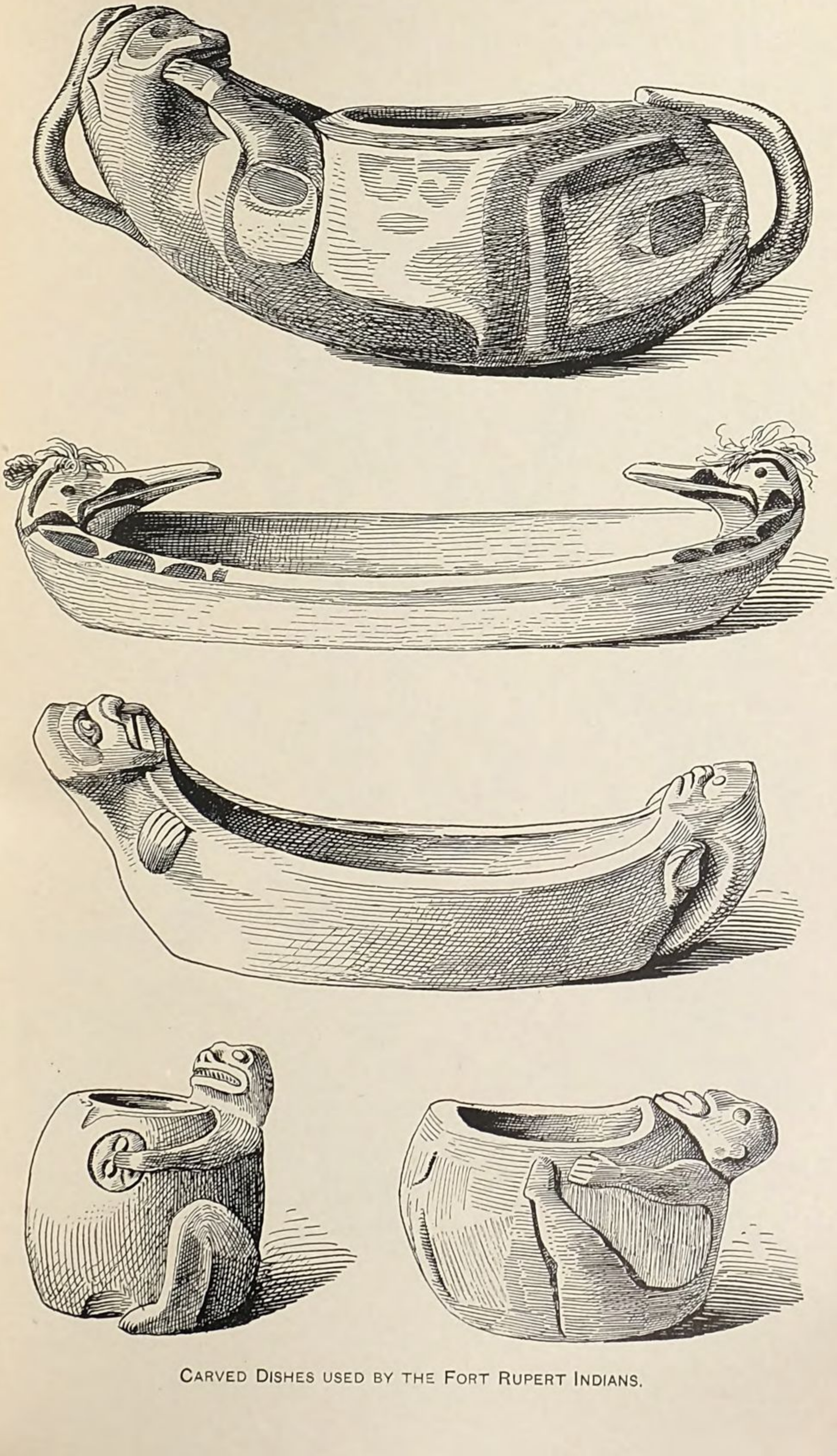
Fig. 1. REPRESENTATION OF THE SEA OTTER.
(IV A 1520, Royal Ethnographical Museum, Berlin.)

Fig. 2. REPRESENTATION OF THE CRANE.
(IV A 1523, Royal Ethnographical Museum, Berlin.)

Fig. 3.
(IV A 1525, Royal Ethnographical Museum, Berlin.)

Fig. 4. REPRESENTATION OF THE BEAR.
(IV A 1527, Royal Ethnographical Museum, Berlin.)

Fig. 5. REPRESENTATION OF A MAN.
(IV A 1528, Royal Ethnographical Museum, Berlin.)



CARVED DISHES USED BY THE FORT RUPERT INDIANS.

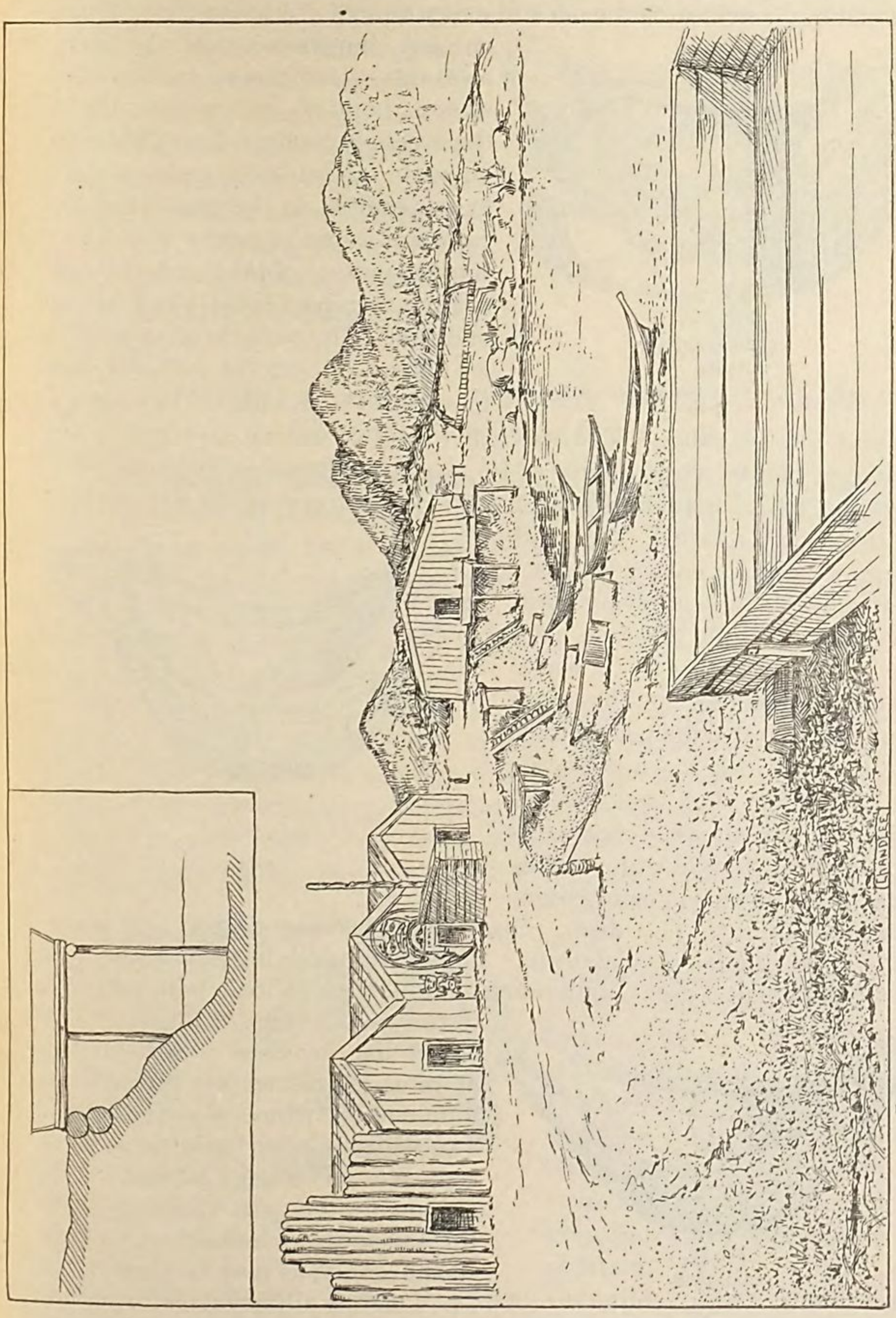


Fig. 26.

VIEW OF THE VILLAGE OF XUMTA'SPĒ.

p. 372). That shown in the next figure on the left of the same plate represents a man and a snake.

From the fact that so many carvings have reference to the clan totem we must not conclude that each and every animal or human figure found on any implement has the same meaning. It seems to me that the strong impulse which the art of these people received from the development of totemistic ideas must have resulted in the general application of animal designs for decorative purposes. That this is the case may be seen particularly in the case of dishes. The most favorite designs for dishes all over the cultural area to which the Kwakiutl belong are the seal and the canoe. The seal is not a totem animal, but merely the symbol of plenty, as no animal of its size furnishes a larger amount of meat and fat. Therefore the seal feast is also reserved for the highest tribes of the Kwakiutl. The seal design is used by each and every tribe and by each and every clan. The same is often the case with the sea-lion design. I have selected a number of the most characteristic seal dishes (figs. 28, 29, 30), and also a sea-lion dish (fig. 31). The dish represented in fig. 30 shows the very characteristic change of style which takes place in the extreme north, beginning at Yakutat. The deep, round forms become flatter and wider and the carving is less elaborate. The idea underlying the canoe dish is evidently that a great abundance of food, a canoe load, is to be given to the guests (figs. 32, 33, 34). The canoe dish develops into a number of animal forms, mainly through the influence of canoe decorations. The canoe is often painted so as to represent a whole animal. This ornamentation was transferred to the dish and has influenced its form considerably, as may be seen in fig. 34. I merely adduce these examples in order to show that not all animal forms have necessarily a totemistic origin. I think, however, that in the course of the development of this culture the preponderance of animal designs which were originally founded on totemism must have by

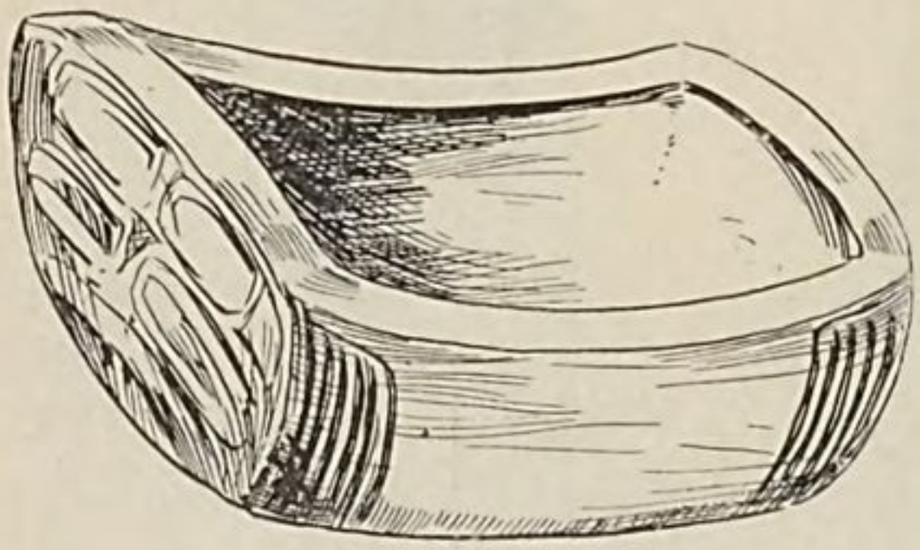


Fig. 27.
FOOD TRAY.
Haida.
Cat. No. 88862, U. S. N. M. Collected by James G. Swan.

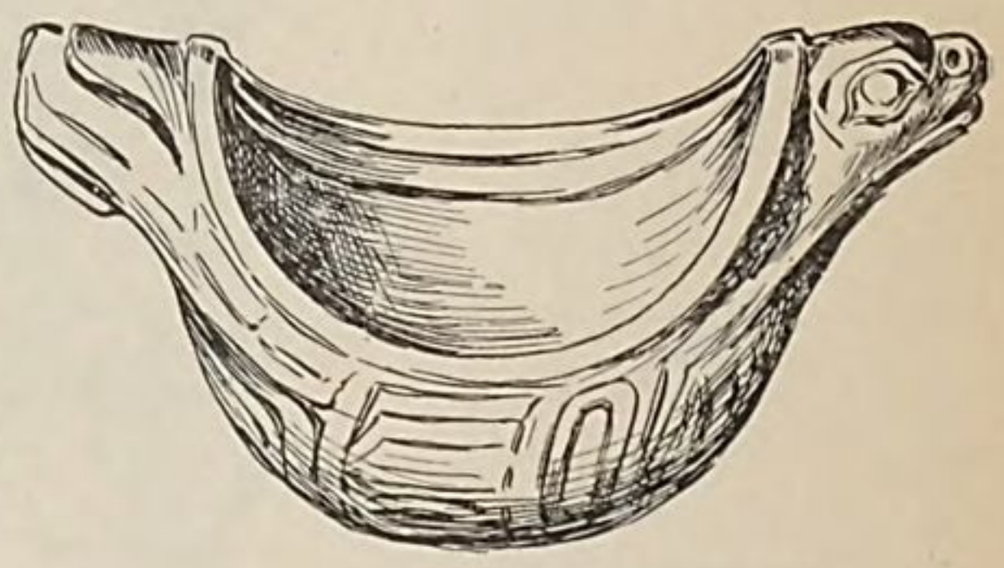


Fig. 28.
SEAL DISH.
Haida.
U. S. National Museum. Collected by James G. Swan.

Fig. 29.
SEAL DISH.
Haida.
Cat. No. 89157, U. S. N. M. Collected by James G. Swan.

a process of euhemerism contributed to the prolific growth of the totem. We have seen that the tendency to decorate objects with animal designs was fostered by an art which was applied almost exclusively to representations of the totem. Thus the animal became the dominating decorative element. The force of analogy must then have induced the people to interpret certain animal figures which were originally only decorative on the principle of totemism.

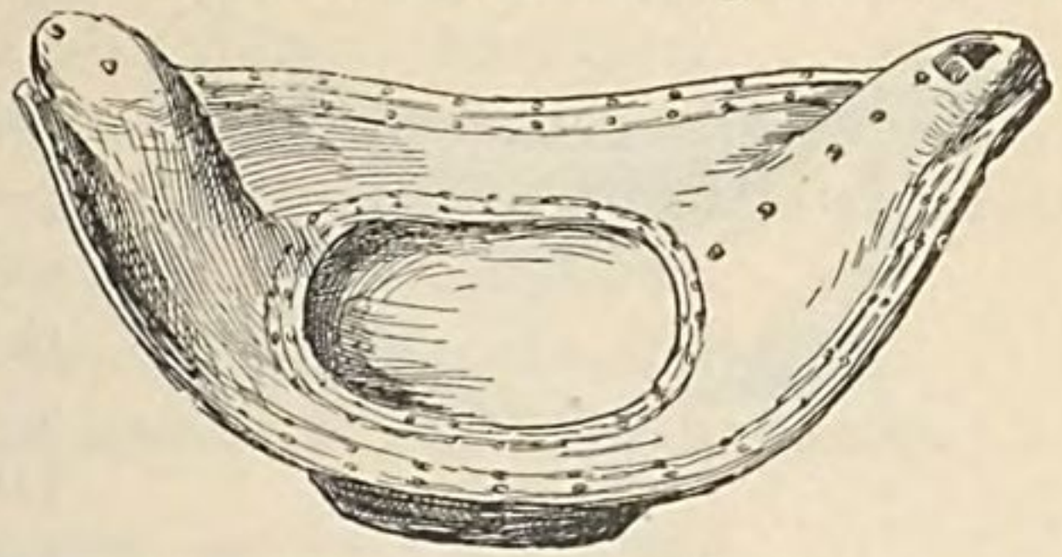


Fig. 30.
SEAL DISH.
Alaska.
U. S. National Museum.

Other objects, such as drums (fig. 35, p. 395), boxes, house posts, etc., seem to be exclusively decorated with designs representing the totem.

VI. The Spirits Presiding over the Religious Ceremonial and their Gifts.

It is a common feature of all the legends referred to heretofore that the supernatural powers which were obtained by the ancestors became the crest of a clan, and that there is no mention of an immediate relation between the descendants of the ancestor and his crest. We have to deal only with legends commemorating the early history of the clan. They do not indicate that the being which helped the ancestor continues to protect his descendants.

We have now to deal with another class of legends which relate entirely to spirits that are still in constant contact with the Indians, whom they endow with supernatural powers. In order to gain their help, the youth must prepare himself by fasting and washing, because only the pure find favor with them, while they kill the impure. Every young man endeavors to find a protector of this kind. It is clear that this idea corresponds exactly to the manitou of the Algonquin Indians, and that we have to deal here with the elementary idea of the acquisition of a guardian spirit, which has attained its strongest development in America. Its specific character on the North Pacific Coast lies in the fact that the guardian spirit has become hereditary. This is the case among the northern tribes of British Columbia. It is also the case among the Kwakiutl and among the Chinook. When the youth prepares to meet a guardian spirit, he does not expect to find any but those of his clan. This is probably the reason for the relatively small number

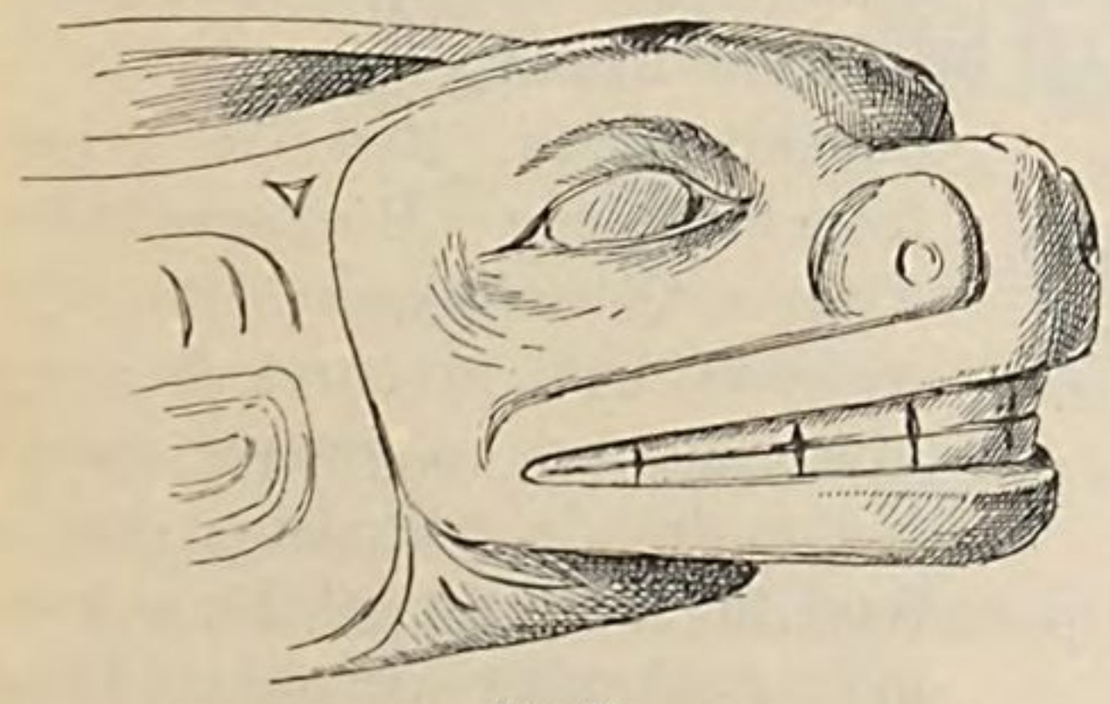


Fig. 31.
DETAIL OF SEA-LION DISH.
U. S. National Museum.

of such spirits—for among the Indians of the plains, among whom each man has his individual spirit, their number is unlimited—and it has also given occasion for the development of a more elaborate mythology relating to these spirits.

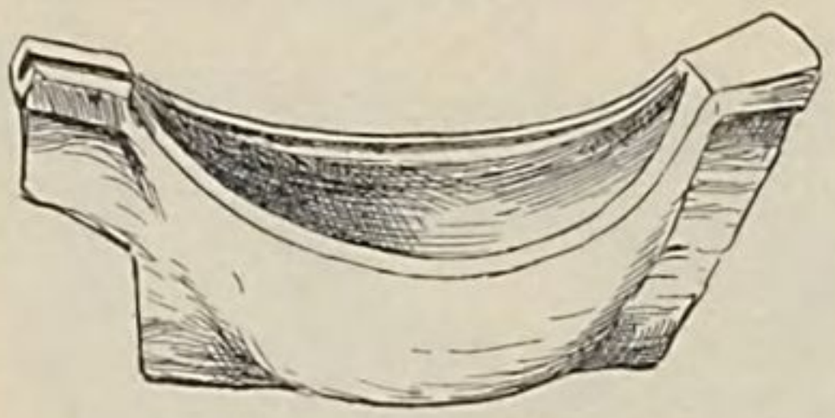


Fig. 32.
CANOE DISH.
Alaska.
Cat. No. 9250, U. S. N. M. Collected by A. H. Hoff, U. S. A.

I shall give a list and brief descriptions of these spirits and of their gifts.

I. Wīnā'lag·ilîs (=making war all over the earth). The descriptions of this being are very indefinite. He is a warrior and lives in the far north. He travels about constantly and never leaves his canoe. So far as I am aware he is never represented in masks or other carvings. By obtaining his protection a youth may acquire one of the following powers. He may become a—

(1) T'ō'X'uît, who is invulnerable and has power over the sī'siuL, which assists him and his friends on war expeditions.

(2) Mā'maq'a. The mā'maq'a has the power to catch the invisible disease spirit, which is constantly flying through the air in the form of a worm. He is able to throw it into his enemies, who die from its effects at once.

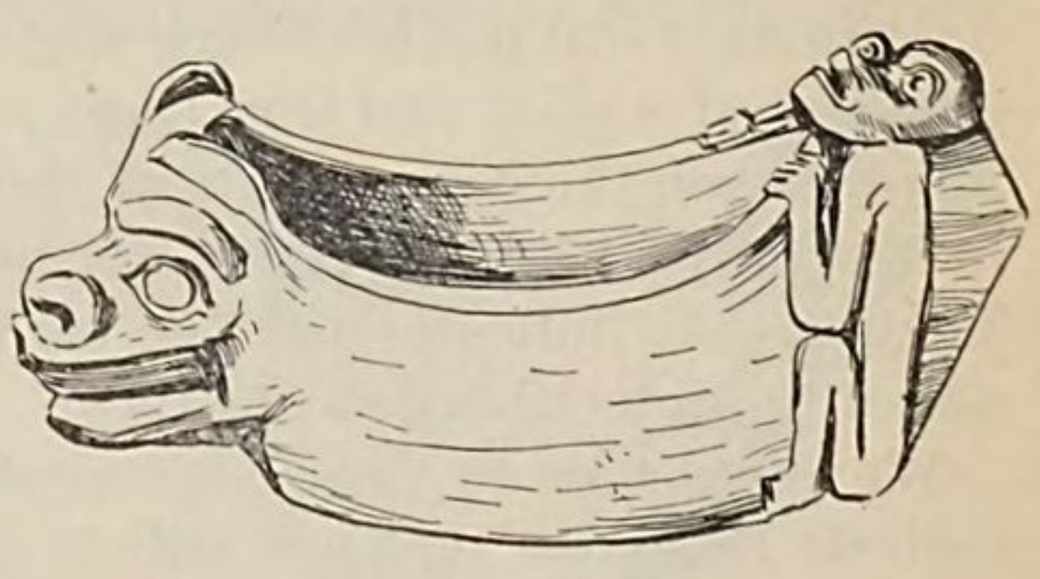


Fig. 33.
CANOE DISH WITH SEA-LION DESIGN.
U. S. National Museum.

(3) HawI'nalaL (=war dancer), who by the help of Wīnā'lag·ilîs is insensible to the pain of wounds and can not be killed, may he be ever so severely wounded.

II. BaxbakuālanuXsī'waē (the first one to eat man at the mouth of the river, i. e., in the north, because the ocean is considered a stream running northward). He is a cannibal living on the mountains who is always in pursuit of man. Red smoke rises from his house. His servant (or wife) is Q'ō'minōqas (=the rich woman), who procures food for him. He has a female slave, K·î'nqalaLala, who also procures food for him, by catching men and gathering corpses. Near the door, in his house, sits his slave QoāxqoāxuālanuXsīwaē, the raven, who eats the eyes of the people whom his master has devoured. In his house live also the hō'Xhōkᵘ, a fabulous bird, with an immensely long beak, which lives on the brains of men, whose skulls he fractures with his beak, and the

Fig. 34.
CANOE DISH WITH ANIMAL DESIGN.
Alaska.
Cat. No. 9244, U. S. N. M. Collected by A. H. Hoff, U. S. A.

cannibal grizzly bear. Hai′alik·ilaL is described as one of his friends. A person who meets him or one of his suit may become a—

(1) Hā′mats'a, a cannibal, into whom he instills the desire of eating human flesh, and who devours whomsoever he can lay his hands upon.

(2) Ha′mshamtsEs, a cannibal of less violent character.

(3) Nō′ntsîstalaL, who is able to devour and touch fire with impunity.

(4) Nā′nē s BaxbakuālanuXsī′waē, the grizzly bear of the cannibal spirit, who delights in killing people with his strong paws.

(5) K·î′nqalaLala, who procures human flesh for the hā′mats'a.

(6) Q'ō′minōqa, who also procures human flesh for the hā′mats'a.

Fig. 35.

SIDE OF BOX DRUM WITH PAINTED DESIGN REPRESENTING THE EAGLE.

IV A, No. 718, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

(7) Hō′Xhokᵘ, who breaks the skulls of men.

(8) Hai′alik·ilaL.

(9) Nā′naqaualiL (=sunrise dance), which is given by BaxbakuālanuXsī′waē and Hai′alik·ilaL jointly.

III. MātEm, who lives on the top of steep mountains. It is a bird, and bestows the faculty of flying.

IV. The ghosts who bestow the power of returning to life after the person has been killed.

There are a considerable number of others of less importance which I will not enumerate here, because in many cases it is difficult to

describe in what the gift of the spirit consists. This difficulty appears even in the preceding list of the most important spirits.

Owing to the fact that these spirits are hereditary, their gifts are always contained in the legend detailing their acquisition by the ancestor of a clan. The principal gifts in these tales are the magic harpoon which insures success in sea-otter hunting; the death bringer which, when pointed against enemies, kills them; the water of life which resuscitates the dead; the burning fire which, when pointed against an object, burns it; and a dance, a song, and cries which are peculiar to the spirit. The gift of this dance means that the protegé of the spirit is to perform the same dances which have been shown to him. In these dances he personates the spirit. He wears his mask and his ornaments. Thus the dance must be considered a dramatic performance of the myth relating to the acquisition of the spirit, and shows to the people that the performer by his visit to the spirit has obtained his powers and desires. When nowadays a spirit appears to a young Indian, he gives him the same dance, and the youth also returns from the initiation filled with the powers and desires of the spirit. He authenticates his initiation by his dance in the same way as his mythical ancestor did.

The obtaining of the magical gifts from these spirits is called Lō′koala, while the person who has obtained them becomes nau′alakᵘ, supernatural, which is also the quality of the spirit himself.

The ornaments of all these spirits are described as made of cedar bark, which is dyed red in the juice of alder bark. They appear to their devotees only in winter, and therefore the dances are also performed only in winter. For this reason they may conveniently be called the winter ceremonial. I shall revert to this subject more fully later on.

The following legend of the origin of the hā′mats'a (told by the Nā′q'oaqtôq) will make clearer what I have said:

The first of the Awī′k·'ēnôx lived at Wā′waLala. Their chief was Nā′nwaqawē. He had four sons who were mountain-goat hunters. At one time the members of his tribe were disappearing one after the other and he did not know what became of them. Nā′nwaqawē wanted to eat mountain-goat meat. His sons offered to go out hunting. These are the names of the sons of Nā′nwaqawē: Ta′wix·amayē and Qoā′qoasililag·ilis, and Yā′qois, and the name of the youngest was Nū′Lilokuē. The young men made themselves ready, and then Nā′nwaqawē advised them. He said: "Do not enter the house the smoke of which looks like blood, else you will never return home. It is the house of BaxbakuālanuXsī′waē. The smoke of the house of the goat is white; go there when you see it. Do not go to the house the smoke of which is grey on one side; it is the house of the grizzly bear. Else harm will befall you. Now go, my sons, and mind what I told you." Ta′wix·amayē replied: "We will try to avoid misfortune." The young men left early in the morning. About noon they discovered the grey smoke of which their father had spoken. Ta′wix·amayē spoke: "Now let us see if our father's advice is good.

Only take care, dear brothers, that no harm may befall us." They went on and soon they met the grizzly bear. They fought with him and he almost killed them, but finally they overcame the bear and killed him. The brothers went on. At night they slept. In the morning Yā'qois awakened his brothers. They went on for a long time; then Ta'wix·amayē said: "My dear brothers, do you see that smoke over there? That is what our father meant when he spoke of the bloody smoke of the house of BaxbakuālanuXsī'waē. Let us go there!" They walked on and came to the door of the house. It was open and the brothers entered. As soon as they came in, a woman called them. Ta'wix·amayē stepped up to her and the woman said: "I am rooted to the floor. I will help you. This house into which you came belongs to BaxbakuālanuXsī'waē. Now do as I tell you and take notice of what you will see. Dig a deep hole in that corner of this house. Then put stones into the fire, and when they are red-hot put them into the hole." When the brothers had done so, she continued: "Now cover the hole with boards. As soon as BaxbakuālanuXsī'waē comes home he will dance, wearing his mask on his forehead." As soon as the brothers had finished their work a whistling sound was heard. Then the woman said: "Now sit down. I will say that I found food, that he may not see what we have planned." BaxbakuālanuXsī'waē entered crying "hāp." Then the hō'Xhokᵘ and QoāxqoaxuālanuXsī'waē began to shout. BaxbakuālanuXsī'waē lay on his back. His body was covered all over with mouths. Then he arose. He became excited and went four times around the house crying "hāp." Then he went into his bedroom (mā'wiL). As soon as BaxbakuālanuXsī'waē had gone in there, the raven with feathers on his head which reached down to his waist came out and danced, going around the fire. The raven went back into the bedroom. Then QoāxqoaxuālanuXsī'waē came out crying "hāp, hāp, gō'u, gō'u!" and danced around the fire. Then he went back into the bedroom and out came BaxbakuālanuXsī'waē crying, "hāp." He danced around the fire and went back into his bedroom. Then came the hō'Xhokᵘ crying "Hāp, hāp, hō, hō." He danced around the fire and went back into his bedroom. Now BaxbakuālanuXsī'waē and his four k·ī'nqalaLala, and the four q'ō'minōqa came out. "Hāp, hāp," said BaxbakuālanuXsī'waē. The k·ī'nqalaLala sang and said "hōîp," and sometimes the q'ō'minōqa sang "hai, hai, hai, hai." BaxbakuālanuXsī'waē danced. As soon as he came to the hole which the men had dug, Ta'wix·amayē pulled away the boards with which it was covered. BaxbakuālanuXsī'waē was looking upward while he was dancing. Then he fell into the hole upon the red-hot stones. Then they covered the hole up. Now he was dead. As soon as he died all the k·ī'nqalaLala and q'ō'minōqa died also. The singers also fainted. While they were unable to see, Ta'wix·amayē took off all their ornaments of red cedar bark. He took the masks and the hā'mats'a pole and the whistles. The old woman told him what to do. She taught him the song of BaxbakuālanuXsī'waē.

When Ta′wix·amayē came home, he told his father Nā′nwaqawē what had happened. Nā′nwaqawē went at once to see BaxbakuālanuXsī′-waē's house. He followed his sons. When they arrived at the house, the woman who was rooted to the floor gave them food and spoke: "My dear, Nā′nwaqawē, you shall dance and keep the hā′mats'a mask, the raven mask, and the hō′Xhokᵘ mask, and the BaxbakuālanuXsī′waē mask, and all the different kinds of red cedar bark. The q'ō′minōqa shall have red and white cedar bark mixed, and the "Bear inside the door of this house" shall have whistles. The nō′nLtsistālaL shall have two whistles and red and white cedar bark. You shall also see how the bedroom (mā′wiL) and the hā′mats'a pole are made. You see it there, extending through the roof. Here, take the whistles of BaxbakuālanuXsī′waē." Thus spoke the woman to Nā′nwaqawē. Now the woman taught them the songs. She sang the song of the head mask. This is the song:

1. The hā′mats'a mask of the forehead, the hā′mats'a mask of the whole world, the pretty mask of that real BaxbakuālanuXsī′waē. The hā′mats'a mask of the forehead, the hā′mats'a mask of the whole word, the pretty mask, a ma ma ma mē ha mē.
2. The hō′Xhokᵘ mask of the forehead, the hō′Xhokᵘ mask of the whole world, the pretty mask of that real BaxbakuālanuXsī′waē. The hō′Xhokᵘ mask of the forehead, the hō′Xhokᵘ mask of the whole world, the pretty mask, a ma ma ma mē ha mē.
3. The raven mask of the forehead, etc.
4. The cannibal mask of the forehead, etc.

Then the woman spoke: "These are the songs of the hā′mats'a mask of BaxbakuālanuXsī′waē. Now listen to the song of q'ō′minōqa. You shall know that she always goes to get food for BaxbakuālanuXsī′waē. This is the song:

1. Q'ō′minōqa goes with me around the whole world. Hiai, hiai, ai, ai, hiai, hiai. Q'ō′minōqa walks all around the world. Hiai, hiai, ai, ai, hiai, hiai.
2. We are afraid of Q'ō′minōqa's body which is covered with blood. Hiai, hiai, ai, ai, hiai, hiai. Q'ō′minōqa is feared by all because her body is terrible. Hiai, hiai, ai, ai, hiai, hiai.
3. Q'ō′minōqa's cedar bark is tied on to you. Hiai, hiai, ai, ai, hiai, hiai. The red cedar bark of the whole world is making you voracious. Hiai, hiai, ai, ai, hiai, hiai.

Then the woman spoke again: "That is the song of q'ō′minōqa. Thus you shall do whenever you initiate a hā′mats'a; then the q'ō′minōqa shall carry a corpse on her arms and she shall feed it to the hā′mats'a." Then Nā′nwaqawē spoke: "My dear, go and teach us all you can. Tell us what BaxbakuālanuXsī′waē was doing, and tell us all his names." Then the woman spoke: "Now listen, these are his names: Qoa′lamk·aslag·ilîs (eating alive on earth), and NōXdana (eating one man), and Tā′nîs (hā′mats'a) and Nā′wikᵘ (having eaten one), and Lā′wēkᵘ (having swallowed), and LaxLawēkᵘ (swallowing while standing), and Hō′kwētasō (wishing to be tamed), and xōqamgasā′lag·ilîs (swallowing skulls on earth), and xō′qamēLā′lag·ilîs k·asō BaxbakuālanuXsī′waē (the real BaxbakuālanuXsī′waē, swallowing skulls

on earth), and Qēdana (eating many). And these are the names of the q'ō'minōqa: Nā'wis (alone on earth), and Lawis k·asō Baxbakuālanu-Xsī'waē (the real BaxbakuālanuXsī'waē, standing on earth).

"All red shall be the cedar bark of the hā'mats'a, and white and red shall be the cedar bark of the q'ō'minōqa.

"And this is the song of the k·î'nqalaLala." Then the woman sang:

1. Oh, how nicely you heal your hā'mats'a by your song, by your magical means of healing, ma mē hama hamē.
2. Oh, how nicely you sing your secret song for your hā'mats'a, your magical secret song, ma mē hama hamē.
3. Oh, how nicely you sing your winter ceremonial songs for your hā'mats'a, your magical winter ceremonial song, ma mē hama hamē.

Then the woman stopped singing and spoke: "This is the song of the k·î'nqalaLala." Then Nā'nwaqawē asked the woman: "My dear, now tell me who you are?" Then she laughed: "Do you not know who I am? I am your daughter. Therefore I resolved to teach you all the secrets of the ceremonial of BaxbakuālanuXsī'waē." Then Nā'nwaqawē spoke: "O, my dear! Thanks, that I have seen you again. Now let us go home." Then the woman spoke: "It is impossible for me to go home, because I am rooted to the ground from my backside. I know it is impossible for me to get up from this floor, but you must come sometimes to see me." Then Nā'nwaqawē replied: "Do not say that, child, for I can not leave you behind." Nā'nwaqawē tried to dig out the root, but it became the thicker the deeper he dug. Then Nā'nwaqawē gave up digging and thought he would cut the root, but the woman said: "Do not do that, my dear, else I must die. It is best that you come sometimes to see me." Then Nā'nwaqawē gave it up and the woman spoke: "Now let me sing the song of the nō'nLtsistalaL." Then she sang:

1. You frightened everyone by your gifts, magical Nō'nLtsista dancer, hīa, hīa, hīa, ya.
2. You made everyone feel uneasy by your wild cry, magical Nō'nLtsista dancer, hīa, hīa, hīa, ya.
3. You go all around the word, magical Nō'nLtsista dancer, hīa, hīa, ya. You drive away everyone by your gifts, magical Nō'nLtsista dancer, hīa, hīa, hīa, ya, ya, hīa, ya, ya, hīa, hīa, hīa, ya.

The woman stopped singing and spoke to Nā'nwaqawē: "As soon as you get home, give a winter dance. Let Ta'wix·amayē disappear, he shall be hā'mats'a; then four days later Qoā'qoasililag·ilîs shall disappear. He shall be q'ō'minōqa and get food for that hā'mats'a. Four days later Nū'Liloqoē shall disappear. He shall be nō'nLtsistalaL, and you, Nā'nwaqawē, shall be the 'bear of the door of your house.' You shall have two whistles. And the dancers shall wash every fourth day, and after they have washed four times every fourth day they shall wash every sixth day. After they have washed four times every sixth day they shall wash every eighth day. After they have washed four times every eighth day they shall wash four times every twelfth day. For four years the Hā'mats'a shall do no work, else he will die early. Now

you know the names of all your dancers. Now go home and take the name of the house of BaxbakuālanuXsī'waē. This is its name: 'Place of red cedar bark' (Lā'qakwatsē). That shall be the name of your house." Now Nā'nwaqawē and his sons went home. When they arrived, he invited his tribe, and after they had eaten Ta'wix·amayē disappeared. Then Nā'nwaqawē's tribe tried to find him who was to be a hā'mats'a. Nā'nwaqawē did all the woman had told him. He and his sons were the first to celebrate the winter ceremonial. That is how we know about the dances and the different kinds of cedar bark. That is the end.

There exist several versions of this important legend, and I will record here another which I obtained from the Awī'k·'ēnôx. The beginning is the same as that of the preceding version; but when they reach the cannibal's house, it continues as follows: They met a woman who was rocking her baby. Opposite her a boy was sitting whose head was enormously large. The four brothers went near the fire and sat down on a box. When they did so, the eldest one hurt his leg so that the blood oozed out of it. Then the boy nudged his mother and said: "Mother, I want to lick the blood," but his mother restrained him. The boy began to scratch his head and finally commenced licking the blood notwithstanding his mother's order. Then the eldest of the brothers nudged the youngest one and said: "Oh, why did we not follow father's advice?" The boy continued to lick the blood. Then the eldest brother took his bow and shot an arrow out of the house through the door. He asked his youngest brother to go and bring it back. As soon as he had left the house he ran homeward as fast as he could. Soon the eldest brother took another arrow and shot it through the door. He asked his next youngest brother to fetch it, and he also took the opportunity and escaped. Finally he shot a third arrow, and the next brother went to fetch it. He also ran homeward as fast as he could. Then the boy began to cry. The woman asked the only remaining visitor: "Are not your brothers coming back?" and he replied: "They only went to fetch my arrows." Then he shot a fourth arrow and went himself to fetch it. As soon as he had left the house he ran homeward. When after some time the brothers did not return, the woman knew that they had escaped. She stepped out of the house and called her husband: "BaxbakuālanuXsī'waē, I have allowed our good dinner to escape." BaxbakuālanuXsī'waē heard her, although he was far away. He pursued the boys, crying "ham, ham, ham" (eating, eating, eating). The four brothers heard him crying, and ran as fast as they could. The eldest brother carried a whetstone, a comb, and a bottle of hair oil. When BaxbakuālanuXsī'waē had come near them, he threw his whetstone over his shoulder, and behold! it was transformed into a mountain which compelled the pursuer to go round about it. But soon he drew nearer again. Then the young man poured the hair oil over his shoulder. It was transformed into a lake and the pursuer had to

go around it. But again he came near the flying youths. Then the young man threw his comb over his shoulder. It was transformed into an impenetrable thicket. The pursuer had to go all around it, and meanwhile the three brothers came home. Their father let them in and bolted the door. Soon BaxbakuālanuXsī′waē arrived and demanded admittance. Nō′aqaua killed a dog, cut it to pieces, and gathered its blood in a dish. Then he invited BaxbakuālanuXsī′waē to come to a knot hole in the wall of his house and offered him the full dish, saying, "This is the blood of my sons. Take it and carry it home to your wife. Come back to-morrow and I will feed you." BaxbakuālanuXsī′waē took the dish and went home. Then Tsō′ēna, Nō′aqaua's wife, made a deep ditch and built a huge fire. She put stones into it which when red-hot, she threw into the ditch. Then a skin was stretched near the fire so as to conceal the ditch. Soon BaxbakuālanuXsī′waē and his wife arrived. He had brought his four children. When they went into the house, he left his youngest child on the beach to watch the canoe. There Tsō′ēna made them sit close to the fire, their backs turned to the skin which concealed the ditch.

Then BaxbakuālanuXsī′waē spoke to Nō′aqaua: "You know how everything happened in the beginning of the world. Tell me!" Nō′aqaua replied: "I shall tell you. What shall I tell you about what happened in the beginning of the world, grandchildren? A cloud was on the mountain. Soon you will be asleep." When he had sung so twice, BaxbakuālanuXsī′waē and his whole family were asleep. Then Nō′aqaua and Tsō′ēna drew the back of their seat and they fell into the ditch. They threw the red-hot stones on top of them. Twice BaxbakuālanuXsī′waē cried "ham, ham!" then he was dead. After some time they pulled out the bodies. Nō′aqaua cut them to pieces and scattered them in all directions, singing: "BaxbakuālanuXsī′waē, you shall pursue man." They were transformed into mosquitoes.

Here is another legend explaining the initiation of the Oē′alîtx, a subdivision of the Hē′iltsuq.

A woman named Ts'u′mkwa!aqas came to the Stikine River. There she gave birth to a boy who was at once transformed into a stone. It is now a large mountain at the Stikine. It has a name, but I do not know it. She had two brothers whose names were Wā′k·as and Dō′kwalēsala living in a village at Goose Island. She wanted to go to see her brothers. She went on in her canoe and came to the Skeena River. There she gave birth to a boy. He was also transformed into stone. It is now a large mountain at Skeena River named Kuga. Again she was with child. She came to Xā′exaês. There she gave birth to a boy, who was also transformed into stone. It is now a large mountain at Xā′exaês named Gugasp'its'awē. Again she was with child. She started in her canoe and came to Dā′yasiowē. There she built a house of cedar bark. After four days she gave birth to dogs.

Then she used to go digging clams on the beach in front of her house

to get food for her children. Now the young dogs began to grow up. At night when it was low water, she went down to the beach carrying a torch, and dug clams. Then she heard a sound like the singing of many children. Ts'u'mkwalaqas wanted to know who the children were. She put her digging stick into the ground, took off her cape, and hung it over the stick. Thus she made it look like a person. Then she went to see who was singing. She looked through a hole and saw now that her children were all boys. Then she was watching them and learned their song, and the song is sung in the Hē'iltsuq language:

1. Spread on the floor. Aiha!
2. Down the stream of the world. Aiha!

Now she jumped into the house and said: "You have no father and you are men. I must always work hard to gather food for you." Only the youngest one put on his dogskin in time before the woman had taken the skins and thrown them into the fire. Then the eldest spoke: "Don't let us sit like fools; let us begin to work and help our mother." He continued: "What work shall I do for my mother? I shall be a wood carver." The second brother said: "I will be her canoe builder." The third brother said: "What work shall I do for my mother? I will be the killer of monsters." Then the dog spoke: "I will be her dog and watch that no sickness comes near her. I shall bark when an invisible spirit approaches." Now it grew dark. On the following morning the wood carver carved figures of men and he carved house posts of different forms—in the shape of all kinds of fish and land animals. It is said the posts were as long as a forefinger. He made eight houses, and then he made one more house. He made it pretty; it had a front carved in the shape of a raven. He built another one with the front carved in the shape of Wiganx·tx, and he made still another one—eleven houses in all. And the canoe builder built toy canoes. He made many.

At night the wood carver took the houses and put them on the ground on each side of his mother's house. The large house was in the middle of that village. Then the canoe builder put his toy canoes in front of the houses. In the morning Ts'u'mkwalaqas went out. What should she see but many people and large canoes. Now she was rich. The wood carver went to the small river near by and made a salmon trap. He carved salmon of alder wood. Therefore the flesh of the salmon is red. On the following day he went to look after his salmon trap. He found one fish in it and gave it to his mother, who cut it open and dried it. On the following day he went again to look after his salmon trap. He found eight salmon. He went home, carrying them on his finger, and gave them to his mother. Then he told his mother to look after the trap from time to time. The killer of monsters had killed by this time all the monsters living in the sea near the coast.

Then the brothers said they would go into the woods. In the morning they went, and the wood carver was the leader. At night they

rested under a cedar tree. It had not been dark very long when they heard a sound far away, "Wamō-mō-mō-mō-wamō-mō-mō-mō." That means: River, river, run, run, run, run. The three brothers were frightened. Now the sound came closer, closer, and closer. They heard it four times, and every time nearer. They did not know what made the sound. Then they heard another noise, "hāhī, hī, hī, ahī, hāhī, hī, hī, ahī, hī, hī, hī, ahī, hī, hī, hī." (This is the cry of Q'ō'minōqa.)

They heard the cries four times, and they came nearer every time. Then the wood carver said: "I wonder what produces this sound," and the canoe builder said: "Do not talk too much; are you not afraid?" Then they heard a sound again, "hap, hap, hap, hap, hap, hap, hap." (This is the cry of BaxbakuālanuXsī'waē.) They heard the sound four times, and it came nearer every time. Now the sound stopped close to the place where they were sitting. Then the killer of monsters said: "Let us go and see what makes the noise." They all went, and after a short time they saw a large house. Sparks were coming out of the roof. They entered, and a man came and told the brothers to sit down on the right-hand side of the house. Then the speaker of the winter ceremonial said: "Now watch, brothers; now you will get a magic treasure." Then the Nō'nLEmg·ila came in and danced. It was he who always said "wamō-mō-mō-mō." As soon as he had finished, the speaker of the winter ceremonial said: "Watch his dance. We call him Nō'nLEmg·ila. It shall be your dance." Next Q'ō'minōqa came and sang "hahī, hī, hī, hī, ahī, hahī, hī, hī, ahī!"

Then she danced. When she had finished, the speaker of the winter ceremonial said: "It shall be your dance. Her name will be GaLgiyots'ēnôx, or invisible spirit. Now take care of that dance." Thus spoke the speaker of the winter ceremonial to the brothers: "White and red is her dancing ornament." Then the brothers heard far off the hā'mats'a's cry "hap, hap." Now it sounded near the door of the dancing house. BaxbakuālanuXsī'waē came in and cried "hāp" in the doorway of the house, and the people sang for him. This is his song:

1. The whole world speaks of the strength of the mouth of BaxbakuālanuXsī'waē. Hamai, hamamai, hamai, hamamai.
2. Frightened is the whole world of the mouth of BaxbakuālanuXsī'waē. Hamai, hamamai, hamai, hamamai.
3. For four men searched the strength of the mouth of BaxbakuālanuXsī'waē. Hamai, hamamai, hamai, hamamai.

I do not know the song of Nō'nLEmg·ila and Q'ō'minōqa. Now the brothers came home. Then the wood carver disappeared. He was taken away by BaxbakuālanuXsī'waē. After four days the canoe builder disappeared. He was taken away by Nō'nLEmg·ila. That is how the winter dance of Oē'alîtx originated. That is the end.

I will give still another legend of an initiation by BaxbakuālanuXsī'waē. It belongs to the clan G·ē'xsEm of the T'Ena'xtax.

The first of the T'Ena'xtax lived at Lē'kwadē. Their chief was

Lā'wag·is. He was in love with a girl. Once upon a time she went up the river to pick berries, and Lā'wag·is followed her. He walked along the bank of the river, while she had gone up in her canoe. When it grew dark, he heard cries in the woods. Then he jumped into a pond and rubbed his body with hemlock branches. He went on. He heard the cries all the time and bathed in another pond. He walked on. Now the cries were close to him. He bathed again. Now the cries came quite close to him. He bathed the fourth time. As soon as he had finished, he saw a woman with a large head and matted hair and with a face which was full of scratches. Lā'wag·is went up to her and put his arm around her waist. As soon as he had done so they both fainted. He recovered first, but he put his arms around her waist only tighter. Then the woman with the great head recovered and spoke: "I am the crier of the woods. Now let me go and I will help you to obtain everything easily. I will be your magical helper. You shall obtain easily all kinds of property." Lā'wag·is only held her more tightly. Then she spoke again: "I will raise property for you." But he held her still tighter. Then she spoke again: "I will give you the water of life. Let me go." But he held her still tighter. She spoke again: "Let me go. Take my name, it shall be yours. You will be Qoā'dasgamāls. I will give you the apron that burns everything." Then he let her go. She disappeared at once. She only left the four gifts, which she had given him, on the ground. Then Lā'wag·is took his magical treasures. He went on and tried his apron against the trees of a mountain. Immediately they were burnt, and you can see even now that the mountains of Ts'ā'watē are burnt. Now he was glad. He hid his magical treasures under a cedar tree and went on. He arrived at the village where his sweetheart was living. She asked him: "Why did you not come sooner?" He replied: "I lost my way." That night they went to bed and played together. After a short time he was poked in the side through a hole which was in the boards of the house. He arose and went to look. As soon as he went out his face was covered and he was led away by a man. He did not dare to speak and to ask, but he knew that he was led three times up a mountain and three times down. During all this time his face was not uncovered. Then he knew they were going up a mountain again, and he heard a cry, "hāp, hāp, hāp; haō, haō; gaō, gaō" (the cries of the hā'mats'a, the hō'Xhok^{u}, and of the raven.) Then the man spoke: "My dear, do not be afraid. I want to give you magical power. This is my house. I am BaxbakuālanuXsī'waē. You shall see everything in my house." They entered, and he uncovered the face of Lā'wag·îs. "Now look, friend!" said BaxbakuālanuXsī'waē. You shall have my name, Wilgasā'lag·ilîs, and your name shall be Hā'mats'a. Now watch the dance of the hā'mats'a." Then he heard the cries, "hāp, hāp, hāp; haō, haō; gaō, gaō." Then the raven that was painted on the front of the hā'mats'a's secret room opened its mouth and the hā'mats'a came out, vomited by the raven. Then he danced. Lā'wag·îs did not

see the singers. After the first song the hā′mats'a went back and the hō′Xhokᵘ came out and danced. After one dance he went back and the raven came out and danced. With the next song the hā′mats'a came out carrying a corpse in his arms, which he ate. When he had eaten it, he danced again and went back. He had four songs. BaxbakuālanuX-sī′waē spoke: "This shall be your hā′mats'a, your name shall be Wil-gasā′lag·ilîs, and Hamigā′lagalits'akᵘ and Naxnawisā′lag·ilîs. Don't forget the head masks of the hō′Xhokᵘ and of the raven and the paint-ing of the secret room. He called Lā′wag·is to see a ditch that was in the rear of the house. Then he went and saw it. Something like a rainbow was standing in the hole. Lā′wag·is looked down and saw all kinds of animals and fishes in the hole. BaxbakuālanuXsī′waē spoke: "This is the cannibal post of the dancing house. This shall be your magical treasure. Then he taught him his song:

1. You are the great BaxbakuālanuXsī′waē, to whom every one looks up, ahō, ō, ō, ō, hēm, aēm.
2. This is the way of the true BaxbakuālanuXsī′waē, ahó, ō, ō, ō, hēm, aēm.
3. O, nobody can live before the great BaxbakuālanuXsī′waē, ahō, ō, ō, ō, hēm, aēm.
4. Who came out of the woods to me, ahō, ō, ō, ō, hēm, aēm.

Now he had learned the one song and BaxbakuālanuXsī′waē taught him the second song:

1. You are looking for food, you great magician, mahamai, hama, hamamai; yi hama ma mai hama.
2. You are looking for men whom you want to eat, great magician; mahamai, hama, hamamai; yi hama ma mai hama.
3. You tear men's skins, great magician, mahamai. You try to eat many men, great magician, mahamai, hama, hamamai; yi hama ma mai hama.
4. Everybody trembles before you, you great magician. You who have been to the end of the world, mahamai, hama hama mai; yi hama ma mai hama.

After the song BaxbakuālanuXsī′waē called Lā′wag·is and asked him: "Don't you want this harpoon shaft? It kills everything. Now it is yours, and also this red cedar bark and the fire with which you may burn everything, the water of life, and the quartz for killing your ene-mies." Then Lā′wag·is went home. That is the end.

The following legend belongs to the Nimkish:

There were two friends. One of them had gone into the woods to be initiated by the spirits of his clan, while the other one was not yet pre-pared to meet these spirits. Nevertheless he went to search for his friend and after four days he found him. When he returned, his father asked him where he had been, and he told him that he had found his friend who was being instructed by the spirits. Then his father struck him, saying: "Do you not know that it is forbidden? I shall be killed on account of you." Then the youth became sad. At night he put on his ornaments, which were made of abalone shells, and went into the woods. He went up the river and washed with hemlock branches. The following morning he went on, and the next day he washed again. Then he heard the voice of BaxbakuālanuXsī′waē. At the end of the

fourth day he came to a precipice and lay down at its base to rest. Early in the morning he saw the rock open and out came BaxbakuālanuXsī′waē. He hid, and the spirit flew away over his head. His body was all covered with red cedar bark. Four days the boy stayed there. On the fifth morning when BaxbakuālanuXsī′waē came out again, he followed him, and saw how he took off his cedar bark ornaments on the bank of a pond and went to swim in it. When he dived, the youth jumped forward and put on the cedar bark ornaments. Now the spirit emerged. When he saw the boy decked with his cedar bark ornaments, he said: "You have done well to take my ornaments. Now I can do you no harm." He took him along to his home inside the rock. There he asked him: "What do you want to have? Do you want this harpoon? Do you want the water of life? Do you want the death-bringer? Do you want my hā′matsa?" He gave him all of these. The youth stayed with him for four days. Then he was able to fly. Then BaxbakuālanuXsī′waē instructed him to fly to a place where his father was accustomed to fetch water for cooking. Soon his younger brother came, and when he saw him, he discovered that he had been away a long time. What had seemed to him four days were actually four years. He asked the young boy: "How is father? I am your elder brother. Go and ask father to clean his house." The boy went back and told his father, who beat him for speaking of his dead son. Then the boy ran back and complained to his brother that his father had beaten him for carrying the message. The elder brother sent him back to the house, asking him to repeat his request. The boy obeyed and when his father had heard the message again, he went out to see by himself. As soon as his eldest son saw him he grew excited. He flew across the river to the graveyard, tore corpses out of their coffins and devoured them. Then he flew into his father's house and bit everyone whom he saw.

There are a number of tales referring to the acquisition of the hō′Xhokᵘ. The Naqô′mg·ilisala have the following legend on this subject:[1]

A number of women went to the island Yū′Lē to dig fern roots. They put some dried whale meat over the fire and a red-breasted owl came and picked up some of it. It is said that there are many red-breasted owls there. Then all of a sudden came the hō′Xhokᵘ and alighted on top of a tree. He came downward, pecking the tree. He came down to the bottom of the tree, but it was hard on his beak. Now he walked up to the women. He covered his nose and was transformed into a man. He reached a woman who put some dry whale on the fire. She laid a mat before him and put the whale meat on it. The hō′Xhokᵘ said: "I do not eat whale meat, I eat only man's brain." So saying, he pecked the woman's head, broke her skull, and ate the brain. One of the women had hidden when he came down. She went home and told the tale. Then the Naqô′mg·ilisala resolved to make war upon the hō′Xhokᵘ. Qō′mg·ustals and Waxalalaa took the blood of a woman

[1] Appendix page 680.

and washed themselves. Then they made war on the hō′Xhokᵘ. Now they went to where the women had been. They put whale meat on the fire. At once many owls came there and the hō′Xhokᵘ alighted on the tree. Now he came downward, pecking the tree. When he came to the foot of the tree, he jumped. His beak stuck in a crack of the tree. Then Qō′mg·ustals and Waxalalaa ran up to him and broke off his nose and pushed him into the fire. He was dead. That is the end.

The following tradition of the Awī′k·'ēnôx referring to the hō′Xhokᵘ is of interest because it indicates the ceremonial or dance performed by every novice initiated by this being:

A young man named Q·'ō′mkilig·a went into the woods to fetch cedar bark. There the hō′Xhokᵘ scented him. He found that the youth was clean, and therefore rushed down upon him in order to abduct him. When Q'·ō′mkilig·a heard the spirit coming, he trembled with fear. He hoped to master his fears by smoking, but he failed. He fainted and lay like one dead. The hō′Xhokᵘ came down to him and imbued him with his powers.

When the youth did not return, his friends went into the woods to search for him. They found him lying in a deep swoon. They sprinkled him with cold water, but he did not awake. They carried him back to the village. When his father saw him, his heart was sad. But soon he noticed that he was still alive. He called a shaman and bade him heal his son. The shaman ordered the house to be swept and the floor to be strewn with sand. He took the youth into the woods and stayed there for four days. Then he returned. After four days more Q'ō′mkilig·a also returned. He had received the name QoaLqoā′oē.

He sang of the hō′Xhokᵘ, and suddenly he jumped up in order to devour his father, who was sitting on the opposite side of the fire. He had the cedar-bark ornaments of the hā′mats'a around his neck and head. His head ring slid down and fell right over his mouth, so that instead of biting his father he bit a piece out of his ring. His grandfather took a large black blanket which he wound around the youth's head. He tore it with his teeth. Then the people wound a rope over his mouth; he tore it. Nobody was able to subdue him. All the people fled out of the door for fear. They heard him singing in the house and looked through the chinks and through the knot holes to see what he was doing. They saw him climbing the posts and pushing the roof boards aside. He wanted to pursue the people. Then they stationed two men at the doors, and others held the roof down so that he should not escape. Others entered and threw a bearskin over him. But he crept about in the house and his skin was so slippery that nobody could hold him. In the evening he quieted down and lay so still that the people thought he might be asleep. They made a jacket of cedar bark in which they tried to catch him. But as soon as they approached he jumped up and ran out of the house. On the island Nalkuitxôi′as there were a number of women engaged splitting salmon. He scented them and jumped into the water to devour them. They escaped in their canoe when they saw him coming.

At last QoaLqoā′oē recovered his senses. He spoke to his father: "When I grow excited again, do not try to defend yourself, I shall do you no harm." After a short time he fell again into a state of ecstasy. He lay flat on the floor, his face downward. The people threw a net made of cedar bark over him, in order to catch him. Sometimes they succeeded in placing a foot on his neck, but they were unable to hold him, not even by winding his long hair around their hands. He escaped, and nobody knew what had become of him. He ran about in the woods and when he came back to the village he bit whomsoever he met. When he recovered his senses, he asked his father to boil oulachon oil and to give it to him as soon as he fell into a renewed ecstasy, as this would restore his senses. Once when he was excited, he scented the mussels in a canoe which was approaching the village, but which was still far away. He ran down to the beach and as soon as the canoe landed he ate all the mussels that were in it. Then he became quiet.

Another group of initiating spirits are the ghosts; their protégés are the ghost dancers. Following is a legend of the L'ā′sq'ēnōx regarding the origin of the ghost dance:[1]

Goā′xLa and his children lived in a village in heaven. His sons were Qō′masdôx, the eldest one, Hai′aqoālaL, the next, Nō′lak·as the following, and A′nqolak·as. His rival was Tsîlqoalōlela. He had three sons, Sepā′xis and YaqanLamayē and G·ē′xdEn. Then Tsî′lqoalōLEla wanted to come down to our world. He made a copper ladder on which he was going to climb down with his children. His rival wanted him to pay for it.(?) Now Goā′xLa heard what Tsî′lqoalōLEla had said. Then he walked and walked for four days. All of a sudden, he saw a mountain growing up from this our world reaching up to the sky. Then he went home and told his sons. They got ready and came to the place where he had been before. After a little while they saw the mountain rising up again. As soon as it reached heaven Goā′xLa said to his sons: "I shall not follow you. Go now and call your tribe the Pē′pawiLēnôx. You shall take my dancing implements." Thus he spoke to his sons. Then Qō′māsdôx and Hai′aqoālaL and Nō′lak·as and also A′nqolak·as came down to Raspberry Beach. Then they went on looking for a river. They were walking in the woods and came to Cape Cook. There they found a pole at the point of Cape Cook. Then Qō′māsdôx and Hai′aqoālaL went back, keeping close to the beach. They came to Ots'ō′lis and went to the head of the bay. There they saw smoke. They came up to it and saw a house, which they entered. There were two women who were roasting clams. Then Qō′māsdôx and Hai′aqoālaL asked the women: "Where do you come from?" The women replied: "We came from the upper world and we have no husbands." Then Qō′māsdôx said, "We have no wives. How did you come down?" Then Wī′yolēneqa, one of the women, spoke: "These geese brought us down here and we came to be your wives." The brothers were glad on hearing this and they went home with their

[1] Appendix page 681. See also page 335.

wives, Wī′yolēneqa and WīyoLasoguilak". When they came to Raspberry Beach, the women were with child. They gave birth to boys, and Qō′māsdôx gave his son the name Lā′qoasqEm. The boys grew up quickly. One day the children were playing at the river at one end of Raspberry Beach. Then Lā′qoasqEm fainted on that side of the river. The other boy went back to tell Qō′māsdôx. He came at once to look after his son, and really, he was dead. He buried him immediately. In the evening the boy returned to life, but what could he do? He was inside the coffin box. At night he heard people talking to each other. Then he was able to open the cover of the box. Right away he was called and they went to a house in which beating of boards was heard. Three ghosts were asked to take care of the boy. Then they led him into the dancing house, but they did not go to the rear of the house. They sat in the middle of the right hand side. Now they spoke to Lā′qoasqEm: "Now take care, remember what you see and the songs which you will hear. Don't eat of the food they offer you." There was a chief standing in the house holding a rattle. His name was Hā′mamaxayals. He was chief of all the ghosts. He said, "Come, let my boy go to the rear of the house." But the three ghosts replied, "He is alive." They finished their dance. The boy felt uneasy. Then Hā′mamaxayals said: "Take care, my tribe. We will take that little boy to his house." Then all the ghosts took some moss and put it on their heads. Then the little boy also put some moss on his head. At once he sat on the ground of our own world. A shaman named Hē′Lilalag·ilîs was told to take some urine to wash the people. Then all the ghosts cried "hamamā′" where he was sitting. Qō′masdôx and his wife were eating when they heard the sound, "hamamā′, hamamā′." He ran out of his house to look, and there he saw his son sitting on the ground. He called his wife, "Come." His wife came to see and recognized her own son. Then Lā′qoasqEm called his father, "Go and take some urine to sprinkle your people with." Qō′masdôx brought his chamber. Then the whole tribe came. But the ghosts opened their mouths. As soon as a person passed their mouths while they were saying "hamamā′" he died. Then Lā′qoasqEm shouted, "Sprinkle some urine on the people." As soon as it was done all those who had been dead resurrected. Then he entered his father's house and with him came the noise of the ghosts. The boy was singing their song and the tribe learned it from him. Thus they learned the song of the ghosts. Now listen to the song of the boy! His name was NēnLaxstals, now that he was ghost dancer. No other kind of dance and carving came to him. This is his song:

1. Ya xamamē, ya xamamē, ya xamamē ya.
   Now ghosts, go all to that upper world!
2. Ya xamamē, ya xamamē, ya xamamē ya.
   For great is your wealth in the ground, ghosts!
3. Ya xamamē, ya xamamē, ya xamamē ya.
   For great is your fire and many your hot stones, ghosts!

The origin of the sunrise dance is given as follows:

Kuēxala'lag·ilîs and his tribe, the first of the G·ō'p'ēnôx, were living at G·ē'damîs. At that time it was always dark and it never grew daylight. The first G·ō'p'ēnôx were sad. Then Nag·ēisilakua invited his tribe. As soon as they had all assembled in the chief's house he spoke: "G·ō'p'ēnôx! I did not invite you to eat. I will talk about our world. It is not good that it never gets daylight. Now deliberate, councilors of the G·ō'p'ēnôx, how we can obtain the daylight for our world. That is what I wanted to say." He stopped speaking and an old man named Yaqantayig·ilakᵘ, the father of Kuēxala'lag·ilîs, said: "Ya, G·ō'p'ēnox, let us try to find where Nēnalaats'ēqa is living and let us go to her. Then another old man said: "My tribe, she is living at Xuā'tîs; and it is said that she keeps the sun in her box. Let us go and make war upon the Koskimo, for Nēnalaats'ēqa is of their tribe. Let us take away the daylight that she is keeping in her box." With this the old man stopped speaking. Then Kuēxala'lag·ilîs, who had magical powers, said: "My tribe, you all know I am Kuēxala'lag·ilîs; I have magical powers. Do not make war upon the Koskimo, for I will go to Nēnalaats'ēqa with my friend Ts'ēqaxsdō'kuilakᵘ. Now, make yourself ready, my friend! Let us go to Xuā'tîs. But you, my tribe, take care lest misfortune should befall me." Then all the people said: "We are gladdened after having been downcast, because you have magical powers and therefore you always succeed in your undertakings." Now Kuēxala'lag·ilîs and Ts'ēqaxsdō'kuilakᵘ started. The former said to his friend: "We will not go right to Xuā'tîs. I will go to the woods and try to find a really supernatural power. Do not get out of patience if you have to wait for me for a long time, else we shall not conquer Nēnalaats'ēqa. Hide here and do not let anyone see you." Then he left the canoe and went into the woods at night. After a short time he discovered the squirrel. Kuēxala'lag·ilîs. spoke to him and asked: "What are you doing here, friend?" The squirrel replied: "I am picking crab apples." He asked in his turn: "What are you doing here?" Kuēxala'lag·ilîs replied: "I am trying to bathe in that lake, that I may obtain possession of the box in which is our sun, and which Nēnalaats'ēqa is keeping." The squirrel said: "Do you not know how to transform yourself into a baby and enter Nēnalaats'ēqa's womb? Then, when you are born, you must cry for the box." Then Kuēxala'lag·ilîs was glad to have the advice of his friend the squirrel. He went to his canoe and told his friend: "You may go home. I am not going with you, and do not worry if I stay away long." He pushed the canoe into the water and Ts'ēqaxsdō'kuilakᵘ paddled home to G·ē'damîs. He told the G·ō'p'ēnôx what had happened.

Then Kuēxala'lag·ilîs walked until he saw the village at Xuā'tîs. There he saw Nēnalaats'ēqa sitting in her house, eating salmon. Then he transformed himself into a baby and entered her womb. She vomited at once. Her belly swelled rapidly and after four days she

gave birth to a boy. When he was one day old, he was able to walk, and the following day he began to talk. When the child was four days old, it began to cry for the box. Then Nēnalaats'ēqa gave it to the boy. He stopped crying at once. On the following day the child went playing in the canoe. Then Nēnalaats'ēqa told her speaker to push the hunting canoe into the water. The boy went aboard the canoe and then he began again to cry for the box. His mother told her speakers to put the box into the canoe. Then the boy stopped crying. He pushed off the canoe and went far away from the shore with the tide. Then an old man said to Nēnalaats'ēqa: "What have you been doing? Is that the box in which the day is that is now in the bow of the canoe of that child? Do you not know him? That is Kuēxala'lag·ilîs." Thus spoke the old man. As soon as Kuēxala'lag·ilîs had rounded the point, he opened the box. Then he took out the sun and removed his sī'siuL mask. It grew light at once. The sun spoke: "O, friend! do not keep me! Let me go to the upper world, for now I will try to benefit our world. It will be day now. You have my sī'siuL mask." Thus spoke the sun. Then Kuēxala'lag·ilîs replied: "Do not go just yet, friend! You may go to the upper world when we arrive among my own tribe at G·ē'damîs. They all will praise you." Then he paddled home. The sun said: "My friend! treat my sī'siuL mask well. You may show it during the winter dance, and also the sunrise mask. Its name shall be ĒXts'umatusElag·ilîs (abalone shell from one end of the world to the other). That is all." Thus spoke the sun and bid farewell to Kuēxala'lag·ilîs. Then he went to the upper world.

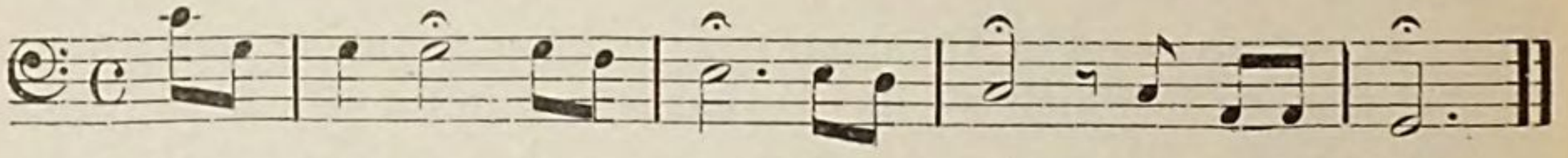
In this manner the G·ō'p'ēnôx obtained the sunrise mask (na'xnak·a-qEmL) and its red cedar bark. It was inside the box. That is the end. (See figs. 129–133, p. 484.)

The Mā'tEm ceremonial derives its origin from the following legends of the Nimkish:

At Pāpēk·în, above Nimkish Lake, lived a young man named Ō'mea-LEmaē. He was always playing with other children. One night he was very hungry. He took salmon roe out of a box and roasted it. When the roe burst, some of it jumped against the neck of the boy's father, who was sitting near the fire warming his back. He grew angry and struck Mā'tEm with a stick. The boy became sad and went into the woods. After walking a long time he came to a place where there was a jam of driftwood in the river. He wanted to die, and he jumped into the water above the jam, but he came up again below, none the worse for his long dive. He came to a second jam and jumped into the river above it, but he came up below hale and well. Then he arrived at a steep cliff. He climbed up and flung himself down the precipice, but he did not hurt himself. He went on and soon he arrived at a mountain which was resplendent with light. It was the cliff Nā'oalakoa. There it was raining quartz all the time. He took up four crystals and placed them in a row on the medial line of his head. He climbed the moun-

tain and his whole body was covered with crystal. Soon he became aware that with the crystal he had attained the power of flying. Then he flew all through the world. He believed that he had been absent for four days, but in reality there had been as many years. Finally he returned to his village. His clan happened to be at Nē′nêlk·as fishing on the lake by the light of torches.

Then he appeared in the shape of a white eagle and quartz was raining down where he was seen. He alighted on a tree and sang—



Then the people knew that he had returned and that he had obtained magical power from Mā′tem. They bathed and went down to the shore, each carrying a staff to which a crystal had been fastened. But Ō′mealemaē, whose name was now Mā′tem, smelled them and did not allow himself to be caught. When it grew dark, he was soaring over the houses. In vain the people tried to catch him. One of his old playmates was very anxious to catch him. He made a loop of cedar bark rope and succeeded in throwing it over the bird's head. The latter continued soaring about. The youth, who now received the name Mā′taanoē, followed him. He asked the people to sweep the house and to place a plank on the roof. When they had done so, Mā′tem alighted on the plank. Three times he flew up again, but the fourth time he came down into the house, accompanied by Mā′taanoē.

Later on Mā′tem went out with his slaves to cut wood. His canoe capsized and he descended to Bē′benaqaua. There he saw many dances and he received the lōlō′lalal, the ghost dance, and the name Lō′lemaē.

I obtained another version of this tale from a Kwakiutl, although the tale belongs also to the Nimkish:

A youth was in the habit of spending his time with his sweetheart and notwithstanding the urgent appeals of his mother he refused to marry. Late one night he came home and asked his mother to prepare food for him. She was angry and said: "Go back to the place where you came from and get your feed there. I shall not give you anything." Then the youth was sad. He lay down and remained in bed four days without partaking of any food. His mother began to worry and asked him to rise, but he did not listen. Then she called the youth's sweetheart to call him, but he did not listen to her either. At last, after four days, he arose and went into the woods without knowing where he went. He had lost his senses. He came to a lake. There he threw off his clothing and swam and dived in the lake. He remained under water for a long time. When he came up again, a totem pole rose with him. He said, "I do not want you," and thought, "I will go

on." After some time he came to another lake. Again he swam and dived. When he came up, a seal harpoon came up with him, but he did not want to have it. He was trying to find the bird Mā'tEm. He came to a third and to a fourth pond, and after having bathed he knew that he would find the bird. He put on his blanket and went on. Soon he saw the bird, which was flying ahead of him. He threw off his blanket in order to be able to follow him more rapidly. Suddenly the bird turned and called, "What do you want of me?" The youth replied, "My mother maltreated me. Now I came to find a magical treasure." The bird retorted: "Do you see yon mountain? That is my abode. Let us climb it!" He flew ahead and the youth followed him. When they had arrived at Mā'tEm's house, the bird gave him quartz and other things, the water of life, the fire of death, and the seal harpoon. He put the quartz crystals into the youth's joints and thus he obtained the power of flying. He sent him to the mountain Ts'î'lk·împaē (feathers on top) in the far north, in order to get eagle down for his dances. The youth started on his journey. When he approached the mountain, it was snowing, hailing, and raining. The people who lived near the mountain keep great fires burning in order to see and to catch everyone who comes to the mountain wanting to get eagle down. But by the help of the quartz the youth passed them without being seen. He gathered the eagle down, and thus obtained the power of assuming the shape of a bird. Then he returned to his own village in the shape of a bird. When his younger brother saw the bird approaching, he laid a snare to catch it. The bird put the snare over its own neck and resumed his human shape. He sent word to his father, asking him to clean his house. When this was done, he came home in the evening and danced as Mā'tEm. On the following morning the bird Mā'tEm brought a totem pole and threw it down in front of the youth's house.

The Mē'iLa is a legend which belonged originally to the Hē'iltsuq and Awī'k·'ēnôx. I obtained the following tale from the Awī'k·'ēnôx regarding its origin:

A young man named Mē'iLa went ten times inside of one year up to the sky. On his first visit he found a gull, which he brought down. On his second visit he found a puffin (?); on his third visit the salmon berries, then a diver (a bird) and the bird xē'xēxē. After his sixth visit he brought the bird atE'mkuli. But when he had gone up the tenth time he did not return again. His mother, Lēelaiaqs, and his father, Q'ōmxto-îs, mourned for him. Finally they fell asleep. His mother thought that in her dream she saw a beautiful house, but on awaking she recognized that what she believed to have been a dream was real. The house was near by, and her son Mē'iLa was sitting in front of it. She awakened her husband that he might see him. They jumped up and ran toward the house. But it retreated from them, and finally they saw that it was in reality up in heaven. Then they sat down and cried, singing "Our son is in heaven playing with Nūsnū'sElîs (the moon).

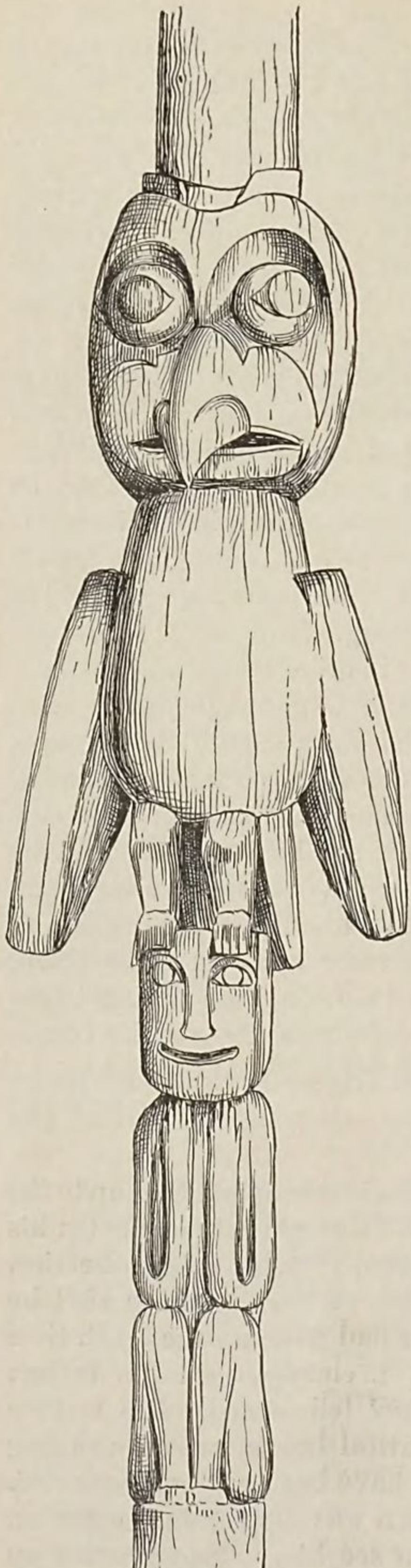


Fig. 36.

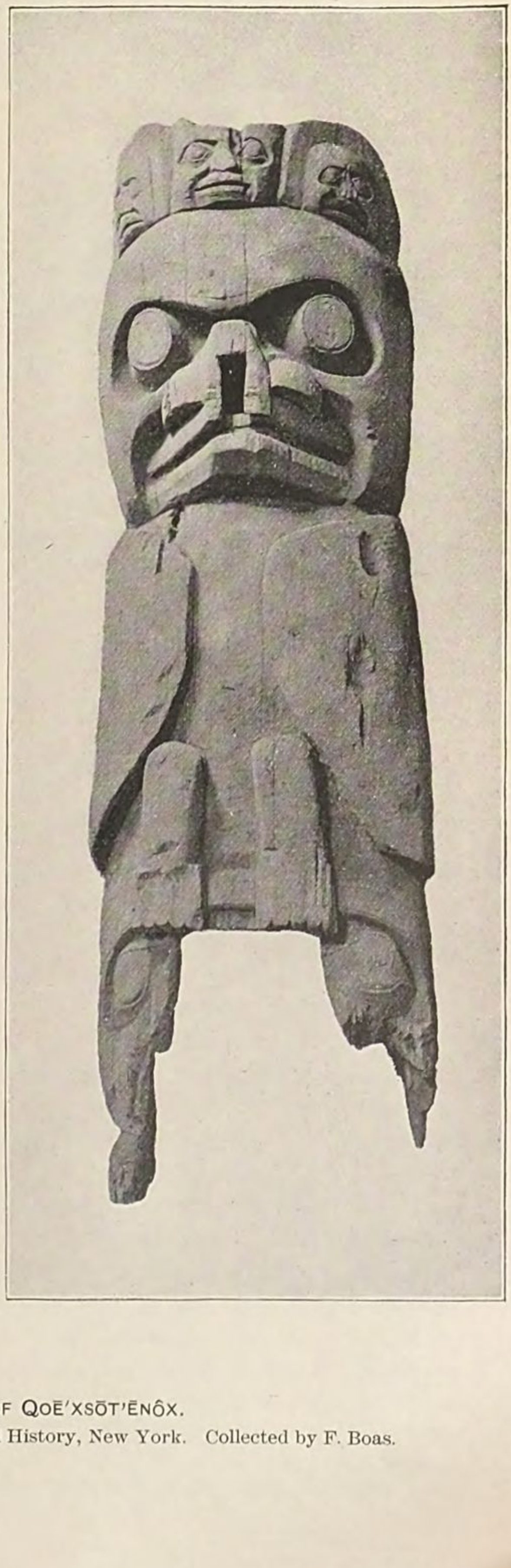
POST OF LĒ'LAXA IN XUMTA'SPĒ.

From a sketch by the author.

Never will he return to us." When they were thus singing, their niece passed by them, and they told her that they had seen Mē'iLa playing in front of the moon's house. Their niece said, "Let us make him appear in our dances." The parents of the boy agreed and let their niece Q'ōqomē'tsEmqa perform the Mē'iLa dance. They gave her his name.

In a number of cases the dance or the powers obtained by the ancestor are also represented on the totem carvings. I will give a few examples of this kind:

There were the first of the Qoē'xsōt'ēnôx at Hē'qams. LālilILax came to be their chief. Now, he said he wanted to go to the river of Gā'yux to see if the sockeye-salmon went up the river. He went far up, but did not find a single salmon. Then he forgot why he had gone up the river. He felt dizzy. All of a sudden he saw a pretty man sitting on a stone. His face was like that of a bird. The man did not see Lā'lilILax. The latter went up to him and stood behind him while the other was not turning his head. He said, "Friend, what are you doing here?" Now the man turned his head and spoke: "Thank you, friend, that you came so that I could see you. I am the one who thunders from the one end to the other end of the world." Lā'lilILax replied: "O, master, I came here for your sake. Now give me a magic treasure." Then the man spoke: "Make a house and invite all the tribes." He showed him the carving of the thunder bird, with two spread legs. They say it was as long as a forefinger. The man spoke: "Its legs are the door of the house. This is my ornament of red cedar bark around its head. The heads on it were given to me by my father that I should eat them. This image of a man you shall place in the rear of your house. It is the image of my father. (Plate 22.) In the coming



POSTS IN HOUSE OF QOĒ'XSŌT'ĒNÔX.

Nos. $\frac{16}{975}$, $\frac{16}{974}$. American Museum of Natural History, New York. Collected by F. Boas.

night this shall be in your village. These shall be your magic treasures: the water of life, the death bringer, and the fire bringer which will destroy your enemies, and the property bringer. Now you are a chief. You will be a thunder dancer, and your name shall be KukunXpalisila, the one who thunders from the one end of the world to the other, and human heads will be on your cedar bark rings and on your neck ring, and your chief's name shall be Yā'qaLEnlîs (property on body)." Then the man disappeared. Lā'liliLax went home. His wife tried to give him food, but he did not take it. His tribe thought that he had obtained a magic treasure. At night his people slept. In the morning they came into his house. Then Lā'liliLax looked at his house. He saw the post of his house, and then he sang his secret song. He was glad that he had received this house, because all had come what the man had told him. This is the secret song of Lā'liliLax:

Fig. 37.

MASK REPRESENTING Đ'A'MTALAL AS THE THUNDER BIRD.

Cat. No. 175523, U. S. N. M. Collected by F. Boas.

My name will be: property drifting toward me on account of my property-bringer. Yao, yao, yao, ha, yao, ha, yao.

The coppers all drift to me on account of the copperbringer. Ha, ha, ha, ha, ha, ha, ha, ha, oh, oh, ho, ho, ho, ho, oh, oh.[1]

Fig. 38.

MASK REPRESENTING Đ'A'MTALAL.

Cat. No. 175524, U. S. N. M. Collected by F. Boas.

Then Lā'liliLax told his tribe to invite all the tribes. The speakers went out between the legs of the thunder bird, which formed the door of the house, and he gave a winter ceremonial. He was the thunder dancer. He owned the red cedar bark of the thunder bird and his name was Yā'qaLEnlîs. All the tribes who were invited came, and he gave away sea-otter blankets, lynx skins, bear skins, marten skins, mink skins, and all kinds of skins. His clan were the G·ē'xsEm of the Qoē'xsōt'ēnôx. Then GEdē', chief of the Lau'itsis, engaged himself to marry Lā'liliLax's daughter. Her name was Ā'omaL; he agreed, and very soon GEdē' married her. He gave his house and his name to his son-in-law, and GEdē' invited all the tribes when he got the house and name. GEdē''s clan were the Sī'sEnLaē. Then Yē'qug·alag·ilîs, chief of the Q'ō'moyuē, engaged himself to marry the daughter of GEdē'. The latter consented, and Yē'qug·alag·ilîs married the daughter of GEdē', who gave him his

[1] This is the call of Ts'ō'noqoa; it means that he is lifting his heavy property from the ground, as though ridiculing his rival.

house and his name. His clan were the Lâxsē of the Kuē′xa. Then Yē′qug·alag·ilîs invited all the tribes to a feast which he gave with what he had received from his father-in-law; the coppers, canoes, slaves, boxes, covers, and names. Now Yē′qug·alag·ilîs took the name Lā′liliLax and the name for the winter ceremonial that belongs to it. That is the end.

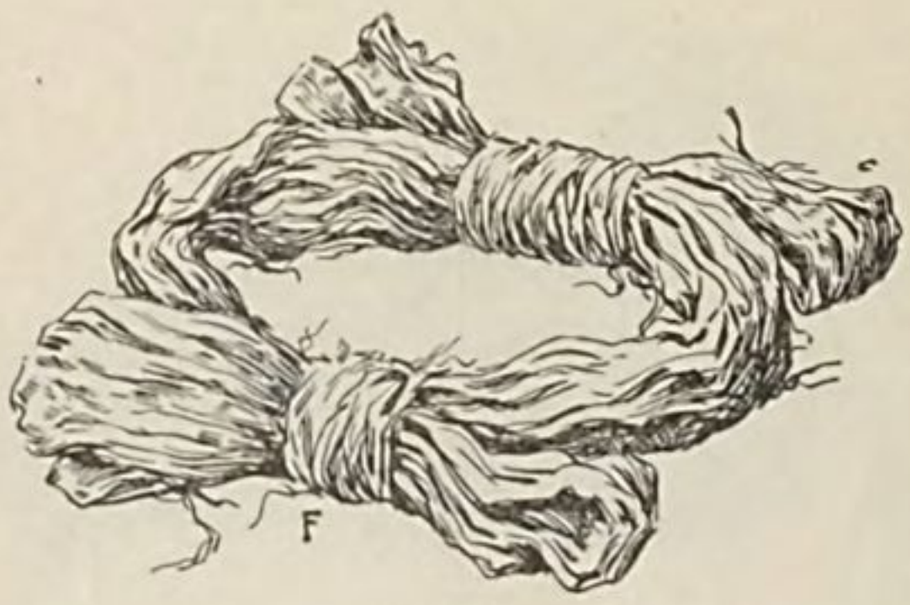


Fig. 39.

HEAD RING OF Ɖ'A′MTALAL.

Cat. No. 175503, U. S. N. M. Collected by F. Boas.

The following legend belongs to the subdivision Mē′Emaqâaē of the Naqô′-mg·ilisala and explains the post shown in fig. 36 (see also pp. 332 and 376):

A man lived in a house at G·igē′LEm. He tried to find the sī′siuL for his magical treasure, but he was unsuccessful. He only died. Then his tribe put up a false grave for him. But he had found a magical treasure and went up to heaven. Blood was put on his false grave, and a sun was painted on it. After four days it began to thunder. Lē′laxa thundered. He came down to the beach early in the morning in the shape of the thunder bird. He took off his mask, and they recognized Lē′laxa. Then he showed his magical treasures; the thunderbird mask, the two-face mask, and the morning mask. He was mā′maqa. He threw the worm against his enemies (see p. 485). He was ts'ē′koîs[1] and sē′lîs.[1] He had the frog, and the mā′maqa who carries spear points. He was cannibal and pa′-xala. He was t'ē′nqoa. The thunder-bird mask belongs to the nō′n-LEm, the other to the winter ceremonial. That is the end.[2]

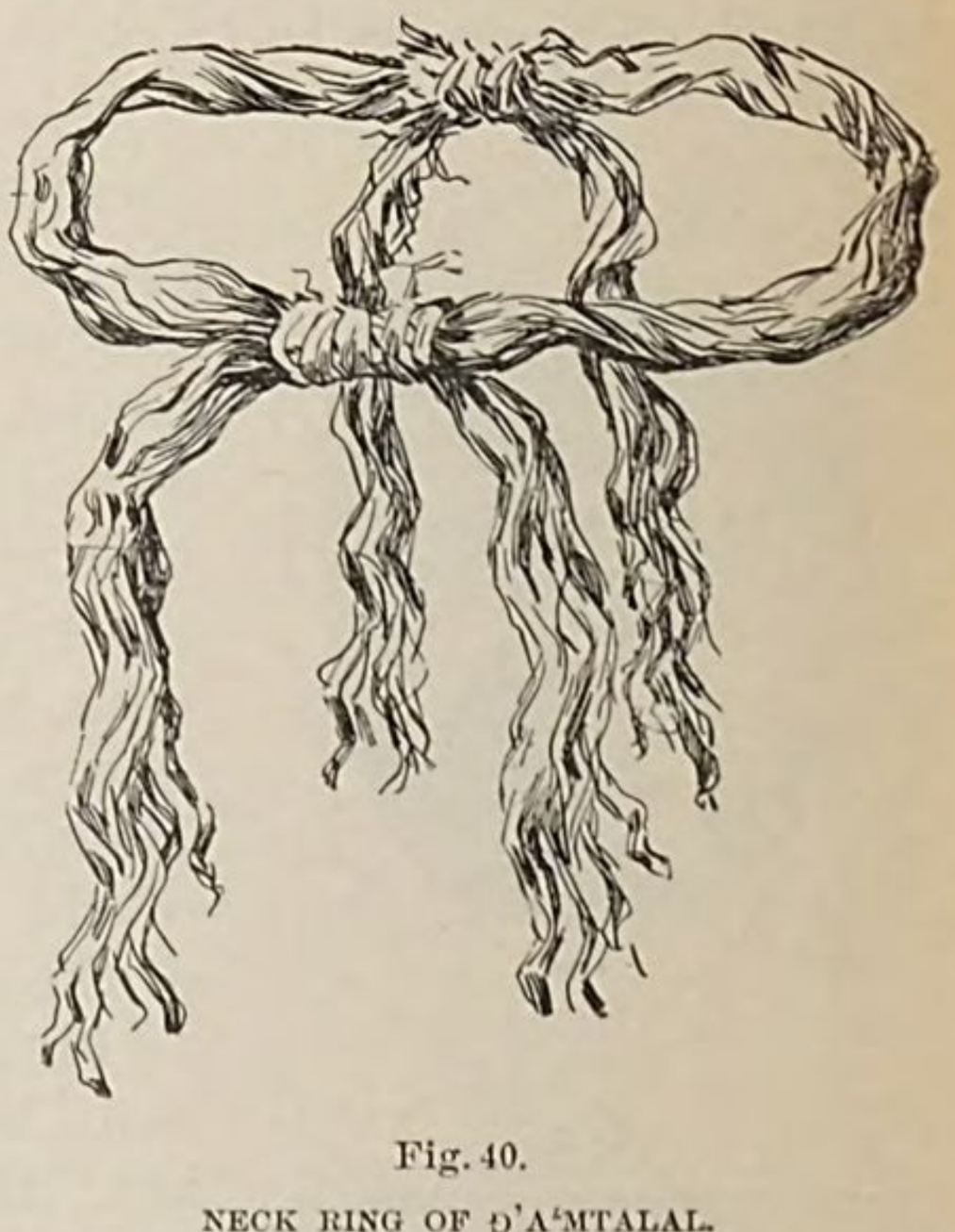


Fig. 40.

NECK RING OF Ɖ'A′MTALAL.

Cat. No. 175505, U. S. N. M. Collected by F. Boas.

The clan Ɖ'a′mȣ'amtElaL of the Ts'a′watEēnôx has a number of carvings and ornaments, the use of which is authorized by the following tradition, which tells of the meeting of the ancestor of the clan with the deity:

Ɖ'a′mtalaL was the name of the chief who lived on one side of the river Ts'ā′watē. X·î′nt'alaqa was the name of his wife. B'a′Lalag·ilak^{u} was his son. Nau′alagumqa and Ts'ē′stalîs were his daughters.

Ɖ'a′mtalaL was making a salmon trap. A man came and looked at him and his hammer fell into the water. But Ɖ'a′mtalaL just said "hoî′p," and the hammer floated. It was Qā′niqilak^{u} who was watching

[1] These will be described later. See page 493.

[2] See Appendix, page 685.

him and who made the hammer fall into the water. Twice the hammer fell into the water, but when he said "hoî'p," it floated. Then Qā'niqilakᵘ spoke to ƛ'a'mtalaL: "Who are you?" "I am ƛ'a'mtalaL." Then Qā'niqilakᵘ said merely: "O, friend." Now ƛ'a'mtalaL asked in his turn: "Who are you, friend?" and Qā'niqilakᵘ replied, "I am Qā'niqilakᵘ, friend." Nau'alagumqa knew Qā'niqilakᵘ's thoughts. She went to her house and closed all the chinks and holes. She knew that Qā'niqilakᵘ was going to make a flood. She and her sister finished closing the chinks and holes of the house. Qā'niqilakᵘ spoke: "Is it true that you are a shaman, friend?" It is said that ƛ'a'mtalaL's face was almost covered by his head ring of red cedar bark. "Give me some of your cedar bark, ƛ'a'mtalaL," said Qā'niqilakᵘ. Then ƛ'a'mtalaL tore a piece of bark from his ring and gave it to Qā'niqilakᵘ. Now Qā'niqilakᵘ made the tide rise, but ƛ'a'mtalaL merely said "hoî'p," and the water ceased rising. Then Qā'niqilakᵘ said: "Truly you can work miracles." Now ƛ'a'mtalaL sent his children home. They left their father. As soon as they arrived in their house, our Lord Qā'niqilakᵘ made a flood. Then ƛ'a'mtalaL died. Then B'ā'Lalag·ilakᵘ took the place of his father. When the tide had gone down, he saw an oulachon in the river. He did not know what kind of fish it was. Then he went home with his sisters. He asked his mother: "What is swimming in the river here? It looks like worms." She replied: "Those are oulachons. They are fat. Make a trap at the point on the beach where the drift logs are and make a string of grass and try to fish."

Then he went back to the river and saw a canoe coming. It stopped on the beach in the same place where B'ā'Lalag·ilakᵘ was sitting. Wē'qaē was in the canoe. He spoke: "What are you doing at my river?" B'ā'Lalag·ilakᵘ replied: "Is that your river? Then tell me what kinds of fish go up the river?" Wē'qaē said: "These are the kinds of fish that go up my river: Steel head salmon, spring salmon, silver salmon, dog salmon, humpback salmon, trouts, that is all." Then B'ā'Lalag·ilakᵘ replied: "Is that all that goes up the river?" Wē'qaē said: "That is all." But B'ā'Lalag·ilakᵘ added: "Oulachon go up my river." "Oh, I forgot that. Let us go ashore. I want to take that boy into my canoe," said Wē'qaē. B'ā'Lalag·ilakᵘ asked his sisters to stay where they were. He was taken and tied in Wē'qaē's canoe. He made him a slave. Now they went down the inlet and came to Dōx'ualits'ēnaē. Then B'ā'Lalag·ilakᵘ moved in the canoe and flew away. In vain they tried to catch him with their paddles. He flew home. Wē'qaē traveled on and came to Qā'qētEn. There he saw the thunder bird sitting on a rock. He landed under the mountain where the thunder bird was sitting, but he did not go out of his canoe. Then the thunder bird sent the wind maker to hear what they said. He went down and heard Wē'qaē saying: "I thought he always made it hail." Then the wind maker went back to tell the thunder bird what he had heard. Now the thunder bird arose and went into his house. He put on his eagle dress and came out again.

Right away there was thunder and lightning and a hail storm and a gale was blowing in Ts'ā'watē. Then Wē'qaē was blown up the inlet. In this manner the Lē'kwiltôq obtained the oulachon.

Figures 37 and 38 show ɮ'a'mtalaL, who came down in the shape of a thunder bird from heaven, took off his bird mask, and became a man. Figures 39 and 40 show his cedar-bark ornaments.

VII. The Organization of the Tribe during the Season of the Winter Ceremonial.

In the preceding chapter I have described a number of spirits which appear to the Indians and are supposed to bestow supernatural powers upon them. From the legends which I have told, it appears that these spirits appeared first to the ancestors of the clan, and I have stated that the same spirits continue to appear to the descendants of these mythical ancestors. The number of spirits is limited, and the same one appeared to ancestors of various clans of different tribes. But in these cases he gave each of his protégés his powers in a slightly different form. In fact each name of the nobility (as described on p. 338) has a separate tradition of the acquisition of supernatural powers, and these have descended upon the bearers of the name. As indicated in some of the traditions, the spirits give new names to the men to whom they appear, but these names are in use only during the time when the spirits dwell among the Indians—that is, in winter. Therefore, from the moment when the spirits are supposed to be present, all the summer names are dropped, and the members of the nobility take their winter names.

It is clear that with the change of name the whole social structure, which is based on the names, must break down. Instead of being grouped in clans, the Indians are now grouped according to the spirits which have initiated them. All those who are protected by Baxbakuālanuxsī'waē form one group; those who stand under Wīnā'lag·ilîs form another group, etc., and in these groups divisions are made according to the ceremonies or dances bestowed upon the person.

Thus, at the time of the beginning of the winter ceremonial the social system is completely changed. The period when the clan system is in force is called bā'xus, which term also designates those who have not been initiated by any spirit, and might be translated "profane." The period of the winter ceremonial is called ts'ē'ts'aēqa, the secrets, which term designates also the ceremonial itself. It is also called ts'ē'qa (singular of ts'ē'ts'aēqa); aik·'ē'gala (making the heart good); and g·ā'xaxaakᵘ (brought down from above). The Indians express this alternating of seasons by saying that in summer the bā'xus is on top, the ts'ē'ts'aēqa below, and vice versa in winter.

During this period the place of the clans is taken by a number of societies, namely, the groups of all those individuals upon whom the same or almost the same power or secret has been bestowed by one of the spirits. Thus the hā'mats'a, nū'LmaL, bear dancers, etc., form each one society, which consists of a limited number of names, because the

members of the society derive each their membership from the initiation of one of the ancestors of the nobility. These ancestors have each only one representative at a time. But many of them are grouped together, as will be presently described.

It follows from these facts that a new member of a society can be admitted only when another one is dropped, whose place he then takes. The custom is analogous to the transfer of a position in the nobility to a youth; the old member transfers his rights to a young man and drops out of the ranks of the society.

The dancers (or societies) are arranged in two principal groups, whose names among the Kwakiutl proper are the seals (mē′êmqoat) and the quē′qutsa. The former embrace a number of dancers and societies of dancers—the hā′matsa, ha′mshamtsEs, k·înqalaLala, nō′ntsîstalaL, qoē′qoasElaL, q'ō′minōqa, nā′nē, nū′LmaL. They are the highest in rank. All the others are quē′qutsa. These are subdivided in smaller groups according to age and sex, as follows:

Males.

1. NaanE′Xsōkᵘ, boys.
2. Maa′mx'ēnôx (killer whales), young men.
3. D'ō′d'ōpa (rock cods), young men, about twenty-five years old.
4. L'ē′L'ēxEn (sea lions), older men.
5. Qoē′qoîm (whales), chiefs.
6. Qō′qosqīmo (Koskimos), old men.
7. Hē′mElk (eaters), head chiefs.

Females.

8. Kēki′xalakᵘ, girls.
9. Qaqaqaō′ (hens), young women.
10. Mō′smōs (cows), old women.

The number of these societies has undergone frequent changes, but the Maa′mx'ēnôx, D'ō′d'ōpa, L'ē′L'ēxEn, and Qoē′qoîm have always remained. The present societies of the women are quite new, as is shown by their names—hens and cows. The former were called until about twenty years ago wa′xwaxoli.

The La′Lasiqoala are divided in the following way: The group corresponding to the seal group is called q'ā′q'anas (a small black shellfish). They embrace the hā′mats'a, mā′maq'a, t'ō′x'uît (ō′lala), hai′alik·ilaL, ts'ē′koîsc, sē′lics, ts'ē′koa'tâ', yiyā′LalaL.

The societies corresponding to the quē′qutsa divisions are the following:

Males.

1. x·ī′x·itpa (puffins), little boys.
2. Laa′lk·ō (mallard ducks), boys.
3. K·'ik·'inē′La (sea anemones), sick and lame people.
4. G·a'g·imōla (halibut hooks), young chiefs.
5. Nē′ntsaē (red cod), third-class chiefs.
6. L'ē′L'axan (sea lions), men about 30 years old.
7. Mō′omguanâ'lē (anchor lines of tribes), old chiefs.

Females.

8. Hä′iaxaqEmaē (eating first), girls.
9. Ts'ēts'āēxsâq (a species of birds), women.
10. Bā′baLē (albatrosses), old women.

The Nā′q'oaqtôq are divided as follows: The group corresponding to the seals are called wu′n'awunx·îs, the troublesome ones. They embrace hāmats'a, bear, and mā′maq'a. I have not a complete list of the subdivisions of the quē′qutsa.

L'ō′L'Epana (cormorants) are the chiefs, ēsElāliLtsawē qoayî′m (the whales for whom one waits), are the young men, ts'ē′ts'eg·inaqa (gulls), the elder boys.

The group corresponding to the seal group is called among the Koskimo ts'E′qolag·ilîs, and embraces wolves and hā′mats'a. The chiefs among this tribe are called t'ō′t'opa (rock-cods), and the higher chiefs nā′nē (bears). The middle-aged men are called guē′gusō (pigs).

The quē′qutsa groups of all these tribes embrace those individuals who, for the time being, are not possessed by the spirits. A member of the quē′qutsa may at any time be initiated by a new spirit and then he or she leaves their ranks. Or he may become possessed of his spirit and show his dance or ceremony. Then he is for the time being not considered as one of the quē′qutsa, but simply as one of these dancers. Therefore the quē′qutsa correspond very nearly to the group of people who have resigned their places in favor of younger ones, as these also may reenter the ranks of the nobility by marrying and thus obtaining a new name.

The seal society are subdivided in two groups: The la′xsâ (gone into the house), those who have gone through the house of BaxbakuālanuXsī′waē and learned all his secrets, and the wī′xsâ (not gone into the house), those who have only "leaned against its walls." All the dancers who are instructed by BaxbakuālanuXsī′waē, the hā′mats'a, ha′mshamtsEs, BaxbakuālanuXsī′waē's grizzly bear, k·î′nqalaLala and q'ō′minōqa belong to the la′xsâ; the others are wī′xsâ.

Each dance (lē′da) has two names belonging to it—the dance name (lē′laēnēxLä′ya) and the quē′qutsa name (quē′tsExLä′ya) which latter the individual assumes when giving up his dance in favor of a younger man, or which he has when not performing his dance or ceremony.

The two groups, the seals and the quē′qutsa, and the corresponding ones among the other tribes, are hostile to one another. The seals when excited attack and torment the quē′qutsa; the latter, on the other hand, tease and torment the members of the seal society. While most of the dancers join during the greater part of the ts'ē′ts'aēqa season the quē′qutsa and perform their dances only at certain occasions, the members of the seal society, particularly the highest ones, the hā′mats'a, must stay with their society, and even when they intend to give up their dance the quē′qutsa try to prevent them by all possible means.

It will be noticed that most of the subdivisions of the quē′qutsa have animal names. For this the Indians give the explanation that the ceremonial was instituted at the time when men had still the form of animals; before the transformer had put everything into its present shape. The present ceremonial is a repetition of the ceremonial

performed by the man animals (nu'xnēmîs) or, as we may say, a dramatization of the myth. Therefore the people who do not represent spirits, represent these animals.

As might be supposed from the laws governing the clan system, the "dance" is principally acquired through marriage. Together with the house, the carvings, and names of the father-in-law, the young man obtains his dance name and quē'qutsa name, but not for his own use. They are given to his successor (Lawu'lqamē), who is initiated in the prescribed way and then performs the ceremony. But the son-in-law of the former owner controls the dance. It can be shown only with his consent, and, when another man marries his daughter, he may take it away from his successor and give it to this person, who then owns and controls it.

By means of marriages with the Awī'k·'ēnôx and Hē'iltsuq the number of dances of the Kwakiutl has been materially increased.

I can now describe the manner in which these privileges which are obtained by marriage are transferred by a man to his son-in-law. I stated previously (p. 359) that according to the number of children of the couple the purchase money which was given by the young man to his father-in-law at the time of marriage is returned with from 100 to 300 per cent of interest. As the time approaches when this money must be returned, the father-in-law calls in all his outstanding debts and gathers all his property, until he has a large stock of food, blankets, boxes, dishes, spoons, kettles, bracelets, coppers, and the ceremonial box lids (g·ī'sExstâla or koqētayā'nō). These are old lids of boxes, some evidently of very great age. Their shape is the same as that of the lids which are still in use, but the front part is much higher and painted with designs representing faces and set with sea-otter teeth (fig. 41). The bracelets are tied to sticks, ten to each stick; besides the large coppers, small ones, about an inch or two in length, are used. Four of these are tied together and to the end of a stick. When the father-in-law has collected the necessary amount of property, he is ready for the ceremony of the return of the purchase money (qautē'x·a). This may be done either in the bā'xus season or during the ts'ē'ts'aēqa. The ceremonies at both seasons are much alike. I will describe here the former, as the latter form a part of the winter ceremonial. The father-in-law calls his clan together.[1] They all come, and

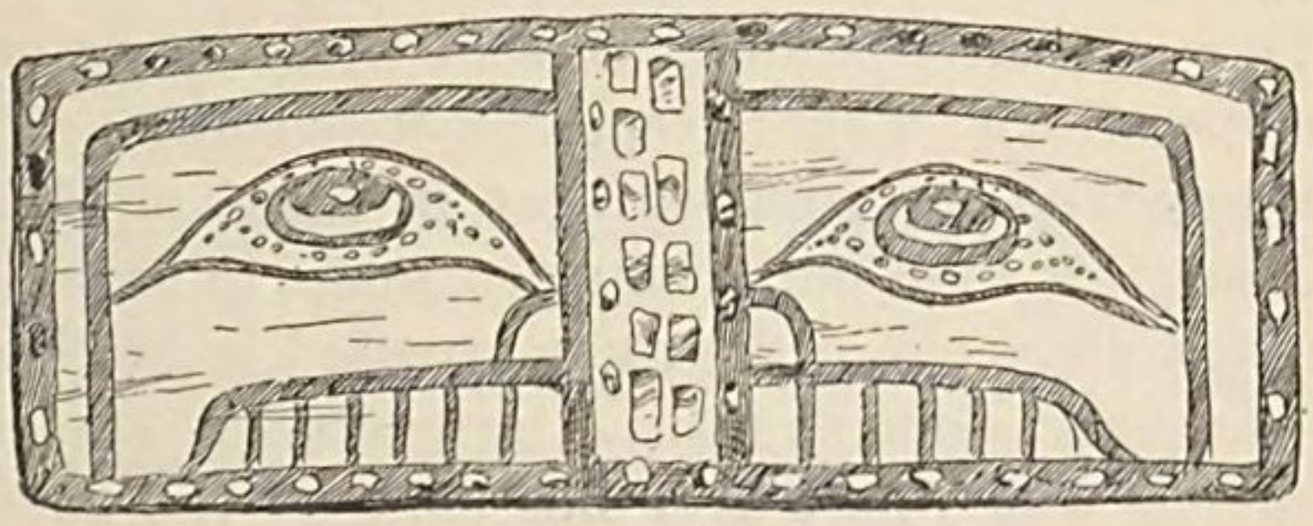


Fig. 41.

G·Ī'SEXSTÂLA, CEREMONIAL BOX LID.

IV A, No. 1128, Royal Ethnographical Museum, Berlin.

[1] Saying to his messengers, Hag·a Lē'lala XEns nE'mē'muta.
Go call our clan.

at this meeting he informs the people what amount of property he is going to give to his son-in-law, and what names the latter is to receive from him; also if he is going to receive his house, his carvings, and his dance. The clan offer the father-in-law their help if he should not have enough property. On the following morning the father-in-law and the son-in-law each call their clan. The young man assembles his people in his house and tells them what he expects his father-in-law to give him, and requests the people to dress as nicely as they can.[1] They put on their button blankets and down and paint their faces. They remain in front of their house while the father-in-law's people take the ceremonial box lids and place them on the beach in the form of a square, the sides of which are about 100 feet long. This is called the canoe (mā'wa), and all the property that is to be given to the son-in-law is placed in this inclosure. From one or two corners of this "canoe" cedar bark ropes are stretched to the front corners of the young man's house. All the spoons and dishes which the father-in-law is going to give away are tied to them. They are called the anchor line of the canoe. The father-in-law calls his clan inside the square.[2] They all carry staffs. One of them sings out "hū, hū, hū!" and all respond, wū! This is repeated four times. The clan of the son-in-law, who are on the summer seat in front of the house, repeat the cries. After this each party sing ten songs in turn. Then the wife of the son-in-law steps out of the canoe dressed in her best. She wears a blanket set with abalone shells. A large abalone shell is fastened to her nose by strings which pass over her ears, as the shell is too heavy to be worn suspended from the septum. For the same reason her earrings are worn suspended from the hair. She performs a dance, after which her ornaments are given to her husband.

The mother-in-law is also in the "canoe." It is customary that during the time preceding this festival people of her own and other tribes send her small presents of food or help her carry water. In return, she gives those who have been kind to her bracelets from out of the "canoe."

Now the speaker of the father-in-law calls the son-in-law, saying: "Come, take care of yourself, else you will have bad luck."[3] He calls four men of his own clan and says to them: "Come! take hold of our property that we have in our canoe."[4] Then turning again to the son-in-law, he continues: "I made an anchor line of spoons.[5] I pay you

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[1] Wā'x'amlîs qoā'lax q'ā'laXdaôxLŌL; t'E'nxāxdaôxLES.
Never mind you dress to the highest pitch; stride on the tips of your toes.

[2] Qē'laxdaôx lā'g·a hau'guxsa.
Come go into the canoe.

[3] Wē'g·a, yā'L'ōsLax, nEgō'mp! Yā'Lâ'nō ā'Las a'mē'La.
Come, take care, son-in-law! Take care else you bad luck.

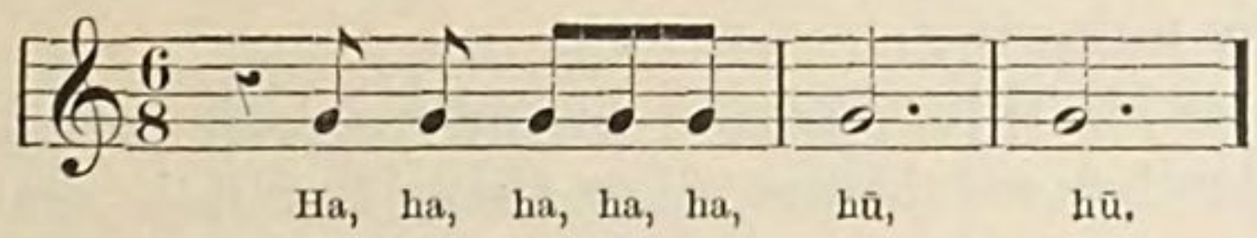
[4] Qē'laxdaôx, lā'g·a qans dā'daxsilax·'itaans sā'xEns mEm'wālē qans.
Come! go our we handle many things of our our loaded canoe.

[5] La'mEn mō'kuanâla xēx k·ā'tsEnāq.
I anchor line these spoons.

capital and interest with these button blankets. This is grease, my son-in-law! This is food for your feast. Your name will be (Mâ'nakula). When we turn to the ts'ē'tsaēqa your name will be (Hē'iLtsaqôlîs)."[1]

When enumerating the blankets, grease, and food, the speaker does not point at them, but takes up sticks which represent these presents.

Then the speaker takes up a box in which the badges and whistles of the winter dance are tied up. The box must be hidden under the blanket, because it is bā'xus season and nobody must see it. He says: "Come, son-in-law, and take my box."[2] The young man takes it and hides it at once under his blanket, saying: "I shall hide this. Thank you."[3] He carries it to his house at once. Then the father-in-law's speaker takes up the copper. If the father-in-law has, at the time when he married, given as many as four coppers, he will sing out:



The speaker holds up the copper and says: "Son-in-law! Now I give you the mast of my canoe (the copper). Its name is (Mā'mokulēlag·a).[4] The son-in-law carries it to his house, and when he comes back, the speaker says: "And now I give you boxes from out of my canoe."[5]

After all the presents have been given, the son-in-law and a few of his friends go to his house. The rest of his friends go up behind the houses and walk secretly up to the end of the village. When they have assembled there, they suddenly rush down to the "canoe" and with an ax split one of the box covers forming a corner of the canoe. While they are doing so the men who went into the house are beating time and the members of the secret societies utter their cries, although it is bā'xus season. This is called "sinking the canoe" (tsō'kunsa). The man who split the box cover says: "Now our loaded canoe is

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[1] La'mEn wuLêLē'k·ila LxĒ'x da k·ô'kuēxtâla. Ēt'ōLtēLai' nEgumpai' L'ēnēqai',
I pay with interest these the button blankets. Also out of canoe son-in-law grease,
hamayeqai' qa ēs LĒ'luxLaōs nEgu'mpē. LēeqamLaôs nEgu'mpē la'ams
food for you you invite them son-in-law. Your name will be son-in-law you are
Mâ'nakula LŌL. Lēx·îls LEns nā'la, la'ams Hē'iLtsaqôlîs.
Má'nakula you will be. When turns our day you are Hē'iLtsaqôlîs.
(to s'ētsā'ēqa)

[2] Qē'la, ax'ai'tax g·în g·îltastî'k·.
Come, take my box here.

[3] Â'Em LEn q'lā'L'it Laqak'. Qē'lak·asla.
Only I hide this red cedarbark. Thanks.

[4] La'men Lāk·e'yā'laxēqai', nEgumpai' g·at Mā'mokulēlag·ai'.
I now mast of canoe son-in-law this Mā'mokulēlag·a.

[5] Laam laLōLai' nEgumpai' qatsEmēqai'.
Then I give out of canoe son-in-law boxes.

broken;"[1] and the son-in-law replies: "Let us be glad."[2] Then he sings the following song of joy:

I will go and tear to pieces Mount Stevens, I will use it for stones for my fire,
I will go and break Mount Qā'tsta'is, I will use it for stones for my fire;
Wealth is rolling down to him from the great chiefs,
Wealth is rolling down to him from all sides; all the chiefs go to him for protection.

The breaking of the canoe indicates that all the property given to the young man will be at once distributed among the tribe. This is done on the subsequent day.

There is still another way by which a dance may be obtained—the same as the crest and bā'xus (clan) names—namely, by killing its owner. It is said that many dances were introduced among the Kwakiutl and related tribes in this manner. I will give a few examples of this custom, to which I briefly alluded at a former place, but which I could not treat fully there, because the custom is so intimately connected with the winter ceremonials. The first instance about which I learned is the following:

Formerly the Mā'tîlpē had no hā'mats'a, but only ha'mshamtsEs, and the other tribes would not allow them to obtain one through marriage. At one time a canoe of northern tribes passed near the village of the Mā'tîlpē. Two young men observed it, and they saw that there were four men and two women in the canoe, one of whom wore the badges of the hā'mats'a. Then the two Mā'tîlpē youths determined to kill the hā'mats'a in order to obtain his dance. They paddled up to the strangers, who asked the two young men to direct them to a camping place. They did so. Then they hid their guns in the bushes near by, and told the strangers that they were on their way to look after their traps. They asked for the loan of the strangers' guns. When they had received them, they went to the place where they had hidden their own weapons, loaded them and shot the four men and the two women. One of the youths took the cedar bark ornaments of the hā'mats'a. He found his whistles in a bag. At once he began to utter the hā'mats'a's cry "hāp, hāp," for now he had the right to use the dance owned by the man whom he had killed. He also took two coppers which he found in the canoe. This method of obtaining a dance and other objects is called kuē'xanEm, obtained by killing.

It is the same when a novice who is being initiated is found in the woods—the person who finds him may kill him. The murderer then obtains his dance, and the relatives of the novice are not allowed to take revenge.

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[1] Laamx lāxsaLē g·îns mō'qamē'x·tik·.
This is broken on the water our loaded canoe here.

[2] Wē'g·a x·îns mō'lx·'ita.
Let us be glad.

The following very characteristic descriptions were given to Mr. George Hunt in the summer of 1895. He tells them as follows:

I was walking on the street of the Nimkish village when I saw Hē′x·hak·Em, who was sitting on his summer seat. He called me and said: "O, my dear! Your days, young men, are good. But our past ways were evil when we were all at war against each other. I mean you have no trouble nowadays. I was three times pursued by northern Indians at the time when we were still naked." Then I asked Hē′x·hak·Em, "Where did this happen?" And he said, "At Gā′widē. We were in two canoes harpooning porpoises. I was in the one, my friend, NEmōXtsaXqô′lag·ilîs, was in the other one. I had killed two porpoises. When it got day, I saw four canoes, and I told my friend. He said to me: 'I will go to the island Gā′widē'; and I said, 'I will go to Ō′gwamalîs. Take good care of yourself. Good bye.' Then I paddled away. My canoe was flying like a bird. Two of the canoes pursued me, but they could not overtake me. Then I looked back and I saw that they could not catch up with my friend, who had nearly arrived at Gā′widē. Then I watched them and I saw how the warriors were looking for my friend. It grew night and I felt badly, for I saw that the warriors had a fire on the beach. I asked my steersman: 'What do you think? Shall we look after my friend and see if they have enslaved him?' He agreed, and we paddled to the island. When we arrived there, I took my gun and went ashore. I went to where the fire was burning on the beach and saw that the warriors had unloaded their canoes. I said to my companion: 'Take care, my dear, I am going to shoot them.' We hauled up our canoe and hid. As soon as we reached there, we sat down close to them. They were eating. There were five men in line from my seat and my friend said that there were three in line from his seat. We put thirty balls of buckshot each in our guns and fired both at the same time. I had killed three and wounded the two others. My friend had killed two and wounded the third man. And I saw two more men running away. Then we ran to the wounded ones and killed them. One man and four women we took alive and made them our slaves. We took the property of the northern people. I looked into a large box, and when I opened it I saw much red cedar bark and abalone shells which were attached to it, and whistles of a hā′mats'a. I asked one of the women: 'What is that in this box?' She only replied: 'Hōm, hōm, hōm, hōm, hōm, hām, hām, hām, hū, hū,' and she bit her own arm. Then I knew that one of these men whom we shot had been a hā′mats'a. I cried hāp right away. There were also two coppers in the bottom of that box. Then we came here to Alert Bay in the canoe of the dead men. Here we were met by our tribe, the Nimkish. We were invited at once by Chief Koax·ilanō′kumē, together with our slaves. He gave us dried halibut to eat. As soon as we had eaten, the chief spoke and said: 'My dear, tell us where did you get these women?' Then I spoke to him and told what

had happened. But first I asked: 'Has my friend NEmōXtsaXqô'-lag·ilîs come yet? He was pursued by these northern people and some others whom I killed, toward Gā'widē. Then I saw these people landing and thought they might have caught my friend. We went to LasiG·alîs and watched them. We saw them making a fire on the beach. As soon as it was night I went to Gā'widē, because I was troubled on account of my friend who was on the island. Then we paddled to the east side of Gā'widē, for the northern people were staying on the north side. I went ashore and secretly went up to where they were staying. They were just getting ready to eat. Then I went back to my canoe and told my companion that they were just getting ready to eat. I said: 'What do you think? Let us kill them. Let us have our own way with them and shoot them from a distance. I do not see any danger in it.' He agreed. Then we shot many of them. I have done well.' Thus I spoke to the Nimkish. And I said: 'Now, there is some more red cedar bark for us; this box is full of various kinds.' I took up the coppers and said: 'I obtained these two coppers. The name of the one shall be Kuē'xanEm (obtained by killing), and that of the other Nā'lgEmala (day on its face).' Then L'umx·ilag·ilîs arose and spoke: 'Thank you, cousin! Now you obtained by killing this red cedar bark and what is in this box. Now take care, Chief! You must show it in the coming winter ceremonial. Now you know what we have done. You may tell it when a person asks where we obtained these dances. Now let all the profane go out of the house that you may see the red cedar bark, else you might say that I invented it. Now you shall know it, chiefs of the Nimkish, and you, young men of the Nimkish.'

"Then Lā'gesawa spoke: 'Truly now I believe that our chief has done well. Now you, young men, go out of the house! Only our chiefs shall stay here.' Then all the men went out and only six chiefs stayed in the house. Then we bolted the door of my house and I opened the box. I put around my neck the ring of red cedar bark and I put the headring on my head. Then I took the whistles and showed them to all the chiefs and I cried 'hāp' as the hā'mats'a cries now-a-days. I spoke: 'Now look at me, Nimkish chiefs. This cedar bark ornament I obtained by killing its owner. Therefore you must not say anything against me. Examine it closely, else you will say later on when I give my winter dance that I invented it.' Then L'ā'qōLas said: 'Chief, what can we say against you since you killed these men? You have obtained this ornament from the man whom you have killed, therefore it is called obtained by killing. It is the same as though you had obtained your hā'mats'a through marriage. Now go on and give a winter dance. Why should we not do it in the right way?' Then my brother's son disappeared right away, and when he came back in winter he was my hā'mats'a. That is what I did in the past. Now you know it."

It is stated by the testimony of all the older Indians that the whole

hā′mats'a ceremonial was obtained in this manner by killing a great number of Hē′iltsuq. The war in which this happened is one of the most famous ones in the history of these tribes. I give here a version obtained by Mr. Hunt.

The Bî′lxula made war upon the Qoē′xsot'ēnôx. It was autumn. They landed above the village Qoā′yastɛm and hauled their canoes ashore. Late in the evening they sent spies out to examine the village. About midnight, when all the Qoē′xsot'ēnôx were asleep, the Bî′lxula launched their canoes and divided. One-half went to the east end of the village, and one-half to the west end. They stayed in their canoes not far from the beach until it was almost daylight. It was foggy. As soon as it grew daylight they landed and many men went to the rear of the houses. As soon as they were ready the most courageous warriors broke into the doors of the houses and speared men, women, and children. Whoever tried to escape through the rear door was speared by the men stationed there. Others of the Bî′lxula looked after the valuable property and put it into their canoes. Now the Qoē′xsot'ēnôx were all killed. Only seven men and five women were left. Then the Bî′lxula set fire to the houses. Their canoes were deeply loaded with men's heads. They went home. At that time people of different tribes had stayed at Qoā′yastɛm; Ma′malēleqala, Lau′itsîs, Nimkish, and Nā′qoaqtôq, all guests of the Qoē′xsot'ēnôx. They were all slain by the Bî′lxula and also some who belonged to the Kwakiutl. Then four men came and told what had happened to Nɛqā′p'ɛnk·ɛm, chief of the Kwakiutl, who was Qoē′xsot'ēnôx by his father's side. Then he called the Kwakiutl and asked them to go to war against the Bî′lxula. Then four men were sent to ask the Ma′malēleqala, Nimkish, and Lau′-itsîs to go to war also. And they also asked the La′Lasiqoala and the Nā′qoaqtôq. Four very strong men were selected, and after six days they came back again. When they came back to Tsāxîs, Nɛqā′p'-ɛnk·ɛm invited them and when they were seated in his house, he called all the Kwakiutl to hear the reports of the messengers. When the people had come, he asked them to be silent and to listen to the words of the messengers. One of them said: "In four days they will all be ready to come, men and women. All decided to go to war against the Bî′lxula." Then Yā′xlɛn said: "Now go, Kwakiutl! Prepare to go, that we may not stay another night when they come. And let our wives wash for four days that we may have good luck. After they had eaten, the men who were going to war took seaweed and blew into it until it nearly burst. Then they made neck rings out of it. When they had done so, Nɛqā′p'ɛnk·ɛm invited all the men and women to his house. He told them what to do, for he knew all the customs of ancient times. He spoke: "Thank you, Kwakiutl, thank you and your beloved wives. Now Kwakiutl, we will soar up and catch in our talons the Bî′lxula. We will be the great thunderbird. We will revenge our fathers, our mothers, our uncles, our aunts, our sisters, and our younger brothers,

and also the chiefs, our grandfathers, Ya′qaʟanlîsts'ē and Lɛk·amāxōt Therefore, I call you to make war upon the Bî′lxula, for they have our names and our red cedar bark. Now, take great care, else we shall not get back our dancing masks. Now we will go and take back the names of our dancing masks. For these we will fight against the Bî′lxula. Now go to-morrow morning and rub your bodies with hemlock branches. You men go altogether to one place. And you women go to another place and rub yourselves also with hemlock branches, for we shall meet later on as though we were fighting. Do not laugh, you women, but carry your kelp in which the breath of your husbands is enclosed. Throw it at your husbands, and when we finish, go into the water. When a kelp tube bursts, its owner must not accompany us, for he would never return."

Then YēqaʟalasamĒ arose and spoke: "My tribe, I am glad on account of your speech. I heard it said that we are going to war. What tribe are we going to make war upon?" He pretended not to know. Then Yā′xlɛn replied: "Chief, we are going to make war upon the Bî′lxula." Then the great warrior uttered the hā′mats'a cry and said: "That was my desire, for that is the only tribe in whose blood I did not dip my hands. Thank you, Kwakiutl, but take care! You must arise in the morning before the crow cries. Do not wear blankets, but you women wear the kelp rings. That is all I want to tell you." Then the men left the house and went to sleep. On the next morning the great warrior YēqaʟalasamĒ himself awakened them before the crows were stirring. Then all the men and women arose. Only those who were menstruating were not allowed to go. First the men went to get hemlock branches, then the women did the same. Then they all went into the sea and sat down crying, "hū, hū, hū." They rubbed their bodies with hemlock branches. When they came out of the water, their bodies were all red. They wiped themselves and then men and women met. Now the hā′mats'a, bear dancers and nū′ʟmaʟ, and all the other dancers, became excited. The women did the same, and then men and women pretended to fight. The women threw the kelp rings at their husbands, who tried to catch them. When a man missed his kelp ring or when it burst, he was not allowed to go on the war expedition. For four days the men and women continued to do this. When they had finished, they prepared their weapons. After five days the Ma′malēleqala arrived in four canoes, the Nimkish in six canoes, the ʟau′itsîs in two canoes, the Ts'ā′watɛēnôx in eight canoes. Then Nɛqā′p'ɛnk·ɛm invited all the tribes. When they were in his house, he gave them dried salmon and afterwards clover root. Before they finished this course Neqā′p'ɛnk·ɛm arose and said: "Fathers, uncles, brothers, children, thank you that you have come. Now let us go and look for our exterminated tribe, the Qoē′xsot'ēnôx, who were eaten by the Bî′lxula. Let us make them vomit our tribe." And all repeated his words and said: "You have said it. We will do it." But Nɛqā′p'ɛnk·ɛm did not

stop speaking. He continued: "Therefore I called you to make war upon the Bî'lxula. My tribe, the Kwakiutl, have eight canoes; the Q'ō'moyuē have four canoes; the Wālas Kwakiutl have two canoes; the Q'ō'mk·ūtîs two canoes. We have sixteen canoes. Nobody whom we meet hereafter shall live. That is all." Then Mā'Xua, chief of the Ma'malēleqala arose and spoke: "You are good, you are great, Kwakiutl. What is it you are saying? Do you say we intend to go to war?" NEqā'p'Enk·Em replied: "Yes; we will go to war." Then Mā'Xua said: "Thank you, friend. Thank you, Kwakiutl. Look at the tears on my face which I wept for the Qoē'xsōt'ēnôx, for our lost names. Now take care, warriors of the Mā'malēleqala, and you Nimkish, Lau'itsîs, Maa'mtag·ila, and Ts'ā'watEēnôx, else we shall not get any heads. Let us start early in the morning. And I will be your guide, for my ancestor was the killer whale. Therefore I am not afraid of anything, neither of war nor of distributing property." Then they left the house.

Early the following morning they started. When all the tribes had come to the island opposite Gua'ts'ē, NEqā'p'Enk·Em and Yē'qaLalasamē arose and the former spoke, "Friends, now our season will change from bā'xus to ts'ē'ts'aēqa as soon as we cut off the head of a man. Then our hā'mats'a, bears and nūLmaL, the hawī'nalaL, and all the other winter dancers, will become excited. Now let spies go ahead in four canoes. Now we are no longer men, we are killer whales. When you see a canoe, fire a gun that we may know it. Then take hold of the canoe, but do not hurt them until we come." NEqā'p'Enk·Em finished speaking and sat down. Then one canoe of the Kwakiutl, one of the Ma'malēleqala, one of the Nimkish, and one of the Lau'itsîs went ahead. They steered to G·î'lsg·îltEm. When they had passed the island, the other war canoes followed. At night they stopped at Nux·saqoīL. Early the next morning YēqaLalasamē sneezed. Then he awakened all the men and said, "Slaves! I sneezed with my right nostril. To-day we shall stain our hands in blood." Then the four spies started again. They did not see canoe nor smoke and all the warriors became sorry. Now they arrived at the mouth of Rivers Inlet. Then MāXua, chief of the Ma'malēleqala spoke, "Listen to me, friends. My heart feels badly, because we have not yet seen anyone whom we might slay. Let us play with the Awī'k·'ēnôx, the tribe of this place, to gladden my heart." The warriors did not want to do it, and while they were still talking the report of two guns was heard. "Now, slaves, paddle. Those were our spies." Then all the men paddled on. The Kwakiutl came to a place where six canoes of Hē'iltsuq were lying and the four canoes of their spies. The Nimkish were the next to arrive. Then came the Lau'itsîs, and far behind the others the Ma'malēleqala. The Hē'iltsuq were telling about their voyage and also that the Bî'lxula had barricaded their houses. Then Yē'qaLalasamē said, "Friends, ask the Hē'iltsuq who is their chief." Then Kalām asked

for the chief of the Hē′iltsuq. One man by the name of Yēimats'alîs replied, "All these men are chiefs of the Ō′yala-îtx. That is the custom of the Hē′iltsuq when they distribute blankets, all their chiefs go inviting. Now I will give you the names: This is O′mx·'it, this Wā′k·as, this Ha′mts'it, this GōxsEmna′kula, this Lā′qoag·ila, Wā′waxamîs, Dō′koaya-isala, Hä''masilakᵘ, Yā′kaL'Enala, Hanā′yus, Quina, Guē′ltôkᵘ, Gā′idē, Lā′Lilila, and Kalā′guyuwîs; they are all chiefs." Then Lā′LaLānam spoke; "How do you feel now? You said before you would not have mercy even on your relatives. Now here are all the chiefs of the Hē′iltsuq." Then Ō′mx·'it untied the cover of his box and took out his whistles. He gave them to his son Wā′k·as, and O′mx·'it himself took the Laō′laxa[1] horn and blew it four times, and Wā′k·as blew the hā′mats'a whistles. Then Yā′xLEn arose and said, "Don't let the voice of the ts'ētsaēqa sound too loud. You heard it. We cannot hurt the red cedar bark that sounded before all of you. Let us meet them with our ts'ē′tsaēqa at the dancing season. We will rival with the dances of our brother O′ts'ē'stalîs, O′mx·'it, Wā′k·as, and Quina. We cannot kill the Hē′iltsuq. Let us go to war against the Bî′lxula." He was just speaking so when the Ma′malēleqala came in sight around the point of the bay. They saw the canoes drifting, and MāXua arose at once and said: "Why do you let your canoes drift about?" And Ya′yaqadalaL took up his lance and killed the steersman of one of the Hē′iltsuq canoes. As soon as he had done so he cried, "hūp, hūp, hūp." Then all the tribes attacked the Hē′iltsuq. Only O′mx·'it was not killed. As soon as the hā′mats'a killed a man he cried, "hāp, hāp, hāp," the bear growled, and every dancer became excited as soon as he killed a man. When all the Hē′iltsuq were dead, they took their freight and divided it. But the red cedar bark and the whistles of the hā′mats'a and of the Laō′laxa were given to the war chiefs. All the chiefs of the Hē′iltsuq were hā′mats'a. Now, Ō′mx·'it was a slave of Mā′Xua, the chief of the Ma′malēleqala. Then NEqā′p'Enk·Em said: "Friends, what do you think? Shall we go on to the Bî′lxula? Think of it, friends! We have done a great thing. The chiefs O′ts'ē'stalîs, Bā′salaL, Wīxwaqoqamaya, and Wā′yats'uLa have not come here. They are near relations of those whom we killed. Are you not afraid of them? Then there are all the sons of O′ts'ē'stalîs. I think we ought to go home." Then they all returned. They had obtained all the names and all the dances of the dead chiefs of the Hē′iltsuq. Since that time the tribes have the cedar bark ornaments of the Hē′iltsuq and their names. They obtained them by spilling the blood of these men in war.[2]

I have given these reports in some detail, as aside of the light they throw upon the acquisition of names and dances by war, they show

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[1] See p. 621.

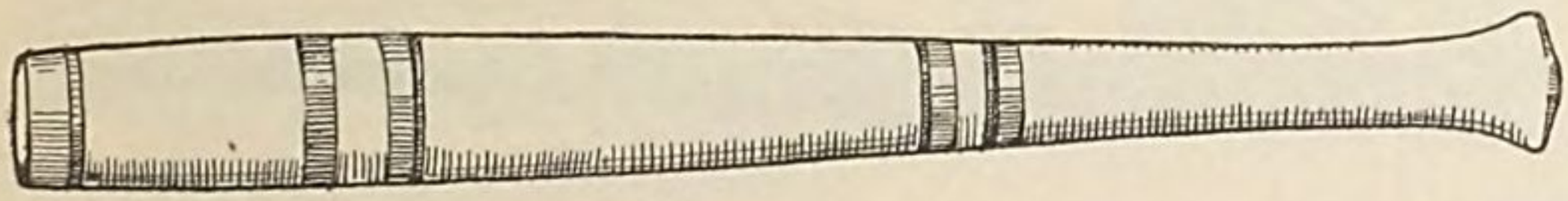
[2] See a Bi′lxula version of these wars in the Seventh Report of the Committee on the Northwestern Tribes of Canada, British Association for the Advancement of Science. 1891, p. 16.

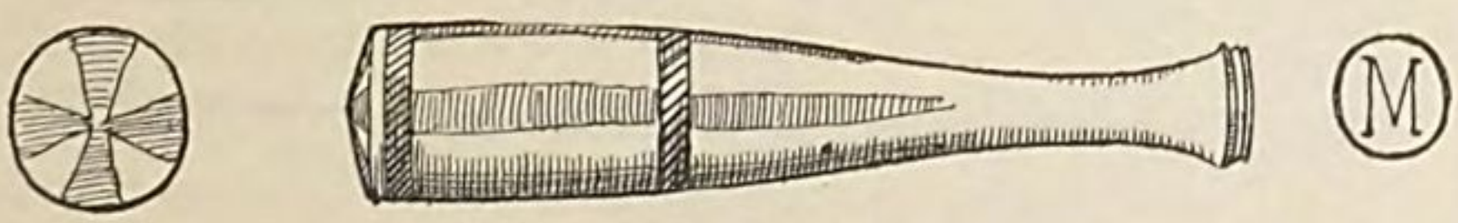
also that the societies are recognized on war expeditions. I shall revert to this subject later on.

Notwithstanding the fact that each and every dance must be obtained by means of a marriage or by killing its owner, there are a number of offices connected with the ceremonials of the societies which are strictly hereditary in the male line and remain, therefore, always in the same clan. To this class belongs the office of the master of ceremonies, the officer who has charge of the drum, of the batons, of the eagle down, and others which will be set forth in the description of the ceremonial (Chapter IX). This is another argument in favor of the theory expressed above that the institutions of the Kwakiutl were at one time paternal, but were later on modified by the influence of the northern tribes, who are on a maternal stage.

VIII. The Dances and Songs of the Winter Ceremonial.

The object of the whole winter ceremonial is, first, to bring back the youth who is supposed to stay with the supernatural being who is the protector of his society, and then, when he has returned in a state





Figs. 42 and 43.

BATONS USED BY ASSISTANTS OF SINGING MASTER.

IV A, Nos. 575 and 577, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

of ecstasy, to exorcise the spirit which possesses him and to restore him from his holy madness.

These objects are attained by songs and by dances. In order to bring the youth back, members of all the secret societies perform their dances. It is believed that they will attract the attention of the absent novice, until finally one of the dances may excite him to such a degree that he will approach flying through the air. As soon as he appears his friends endeavor to capture him. Then begins the second part of the ceremony, the exorcising of the spirit; or, as the Kwakiutl call it, the taming of the novice. This is accomplished by means of songs sung in his honor, by dances performed by women in his honor, and by the endeavors of the shaman. After the novice has thus been restored to his senses, he must undergo a ceremonial purification before he is allowed to take part in the ordinary pursuits of life. The strictness and severity of this purification depend upon the character of the dance. Novices must drink water through the wing bone of an eagle, as their mouths must not touch the brim of the cup; they must suck

no more and no less than four times. They must not blow hot food, else they would lose their teeth.

The songs mostly consist of four verses. Each novice, viz, member of a society, has his own songs. They open with a burden which varies according to the society to which they belong. This burden is

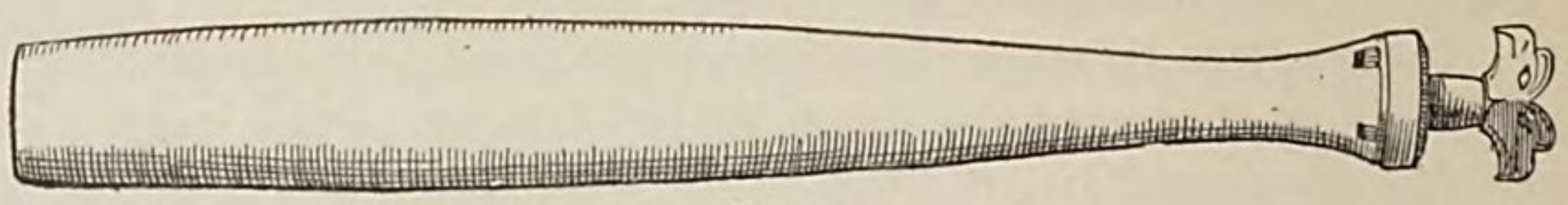


Fig. 44.

BATON OF SINGING MASTER.

Handle representing an eagle.

IV A, No. 1951, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

sung in order to indicate the tune. Then follow the words, which, however, are interspersed with repetitions of the burden. The words are called "the walk of the song" (or, as we should say, the words go this way). Each song is accompanied by beating of time with batons, and by a drum. The beating is sometimes so loud that it almost

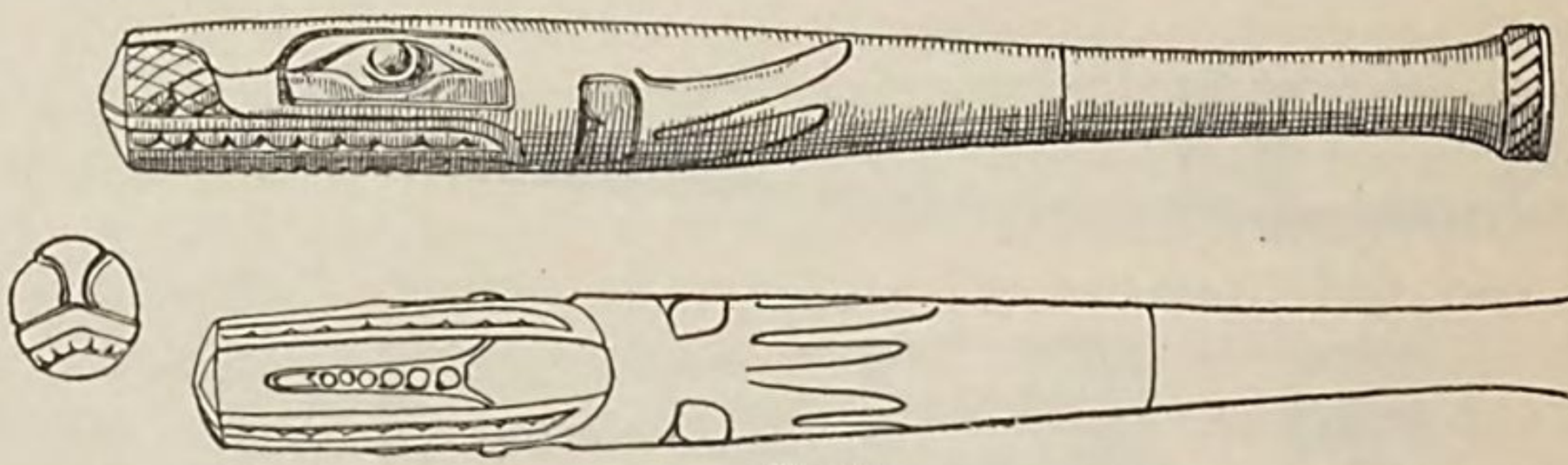


Fig. 45.

BATON REPRESENTING A SEA LION.

Side view, end view, and view from below.

IV A, No. 573, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

drowns the song. The rhythm of the tune, as well as of the beating, is exceedingly complex; but the most striking characteristic is the fact that the beating is always syncopated. The arm is raised when the tone is uttered and falls quickly afterwards. In all songs of the winter ceremonial the beating begins several bars before the singing. It

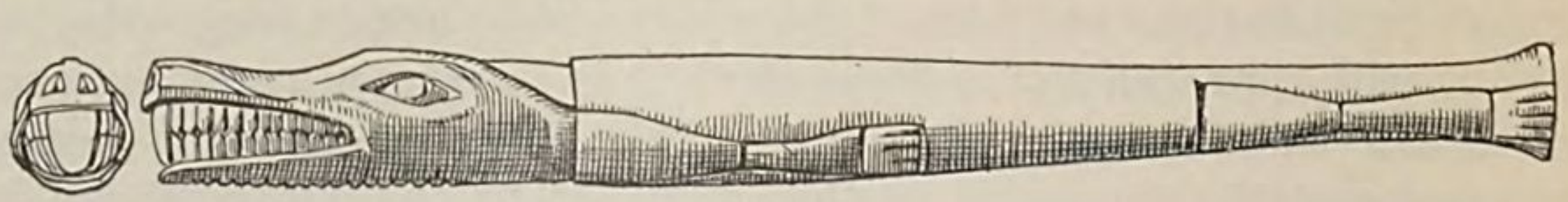


Fig. 46.

BATON REPRESENTING A SEA LION.

End and side views.

IV A, No. 1944, Royal Ethnographical Museum. Collected by A. Jacobsen.

is the reverse in profane songs. The beating is an intrinsic part of the songs and can not be separated from it.

The dances of the various societies differ in character, and will be described in the course of this chapter. They have all this in common, that the dancer on entering the door turns once to the left at a place

between the door and the fire. Then he dances toward the right, leaving the fire at his left. In the rear of the fire he turns again to the left, and after having made a complete turn continues his course. Every time he reaches the front or the rear of the fire, he makes a turn and then continues his way in the same direction. Each dance consists of four circuits around the fire. The motions of the feet follow the rhythm of the beating, not of the song.

When a mistake is made in these songs or dances which are intended

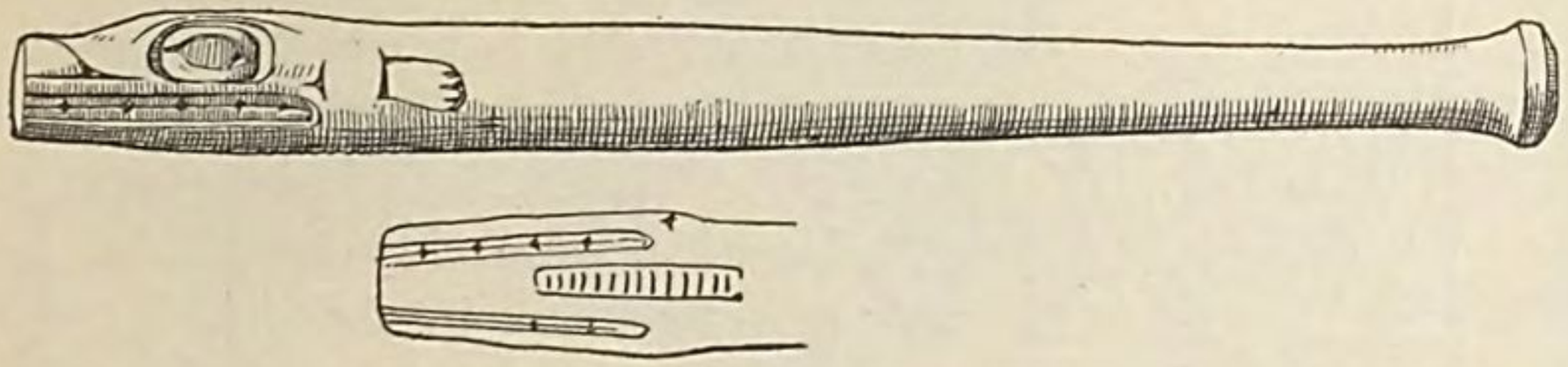


Fig. 47.

BATON REPRESENTING A SEA LION.

Side view and view from below.

IV A, No. 1947, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

to pacify the novice, the effect is not only a renewed ecstasy of the novice, but it also excites all the older members of the various societies and thus produces a general ecstasy.

Errors in rhythm, turning the wrong way in a dance, smiling, and chewing gum are counted as mistakes. The error must be atoned for by an initiation of the person who made the mistake. When the members of the seal society observe a mistake, they jump from their seats and bite and scratch the person who made the mistake. He drops down at once

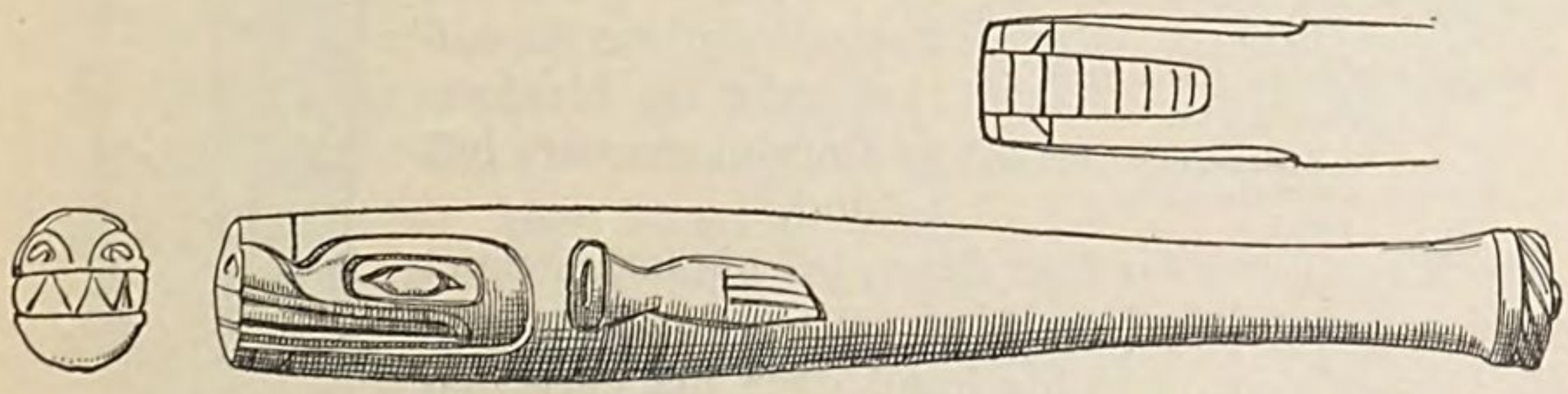


Fig. 48.

BATON REPRESENTING A SEA LION.

Side view, end view, and view from below.

IV A, No. 1948, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

and pretends to faint, and while the excited dancers surround him he disappears. This means that a spirit has taken him away in order to initiate him. The members of the seal society sit on the platform of the house or stand during the dances, that they may be certain to dis cover mistakes. The seal society attack and maltreat throughout the ceremonial the quē′qutsa. At the close of the winter ceremonial they must pay an indemnity for all the damage that they may have done.

No greater misfortune, however, can happen than for one of the

dancers who performs his ceremonial dance to fall. In the course of the winter ceremonial quite a hole gradually develops at the two places where the dancers turn, and it is here that they are most likely to stumble and fall.

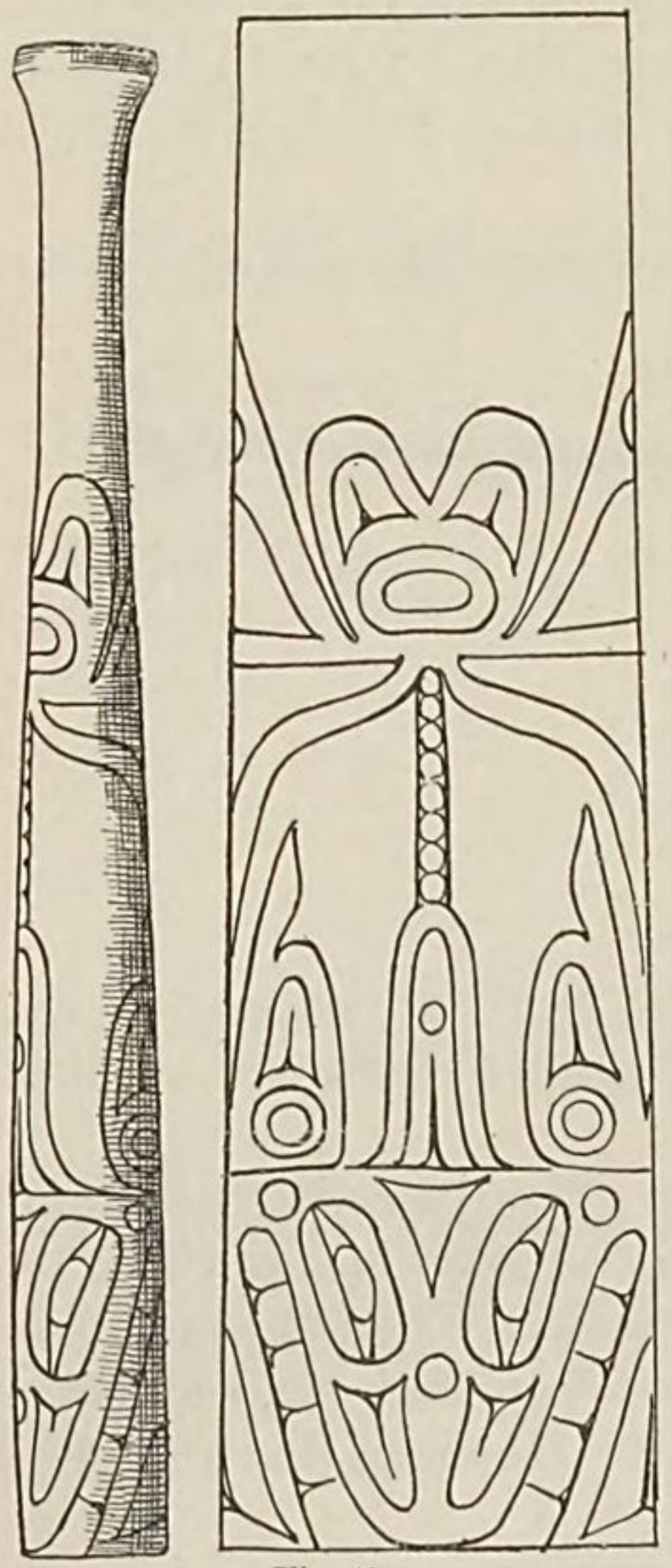


Fig. 49.

BATON REPRESENTING A SEA LION OR KILLER WHALE.

IV A, No. 6898, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

When a hā′mats'a falls in his dance, he must lie down as though he was dead. Then the master of ceremonies calls a man whose name is Ē′k·îstōlîs (sand in eyes, i. e., a drowned person), whose office is hereditary. He is a quē′qutsa, and as an officer he is called ts'ā′ts'exsilaēnôx (doing secretly). He carries a large staff (k·'ē′lag·aiū), which is split like a pair of tongs, and in the interior of which some blood is hidden. With this staff he takes hold of the neck of the hā′mats'a and apparently blood is seen to flow from it. Then all the hē′lig·a (see p. 438) lift the hā′mats'a, put him on their mat, and carry him four times around the fire. After they have gone around the fire four times his whistle is heard in the woods. When the mat is put down, it is seen that he has disappeared and that only his blankets and ornaments are left behind.

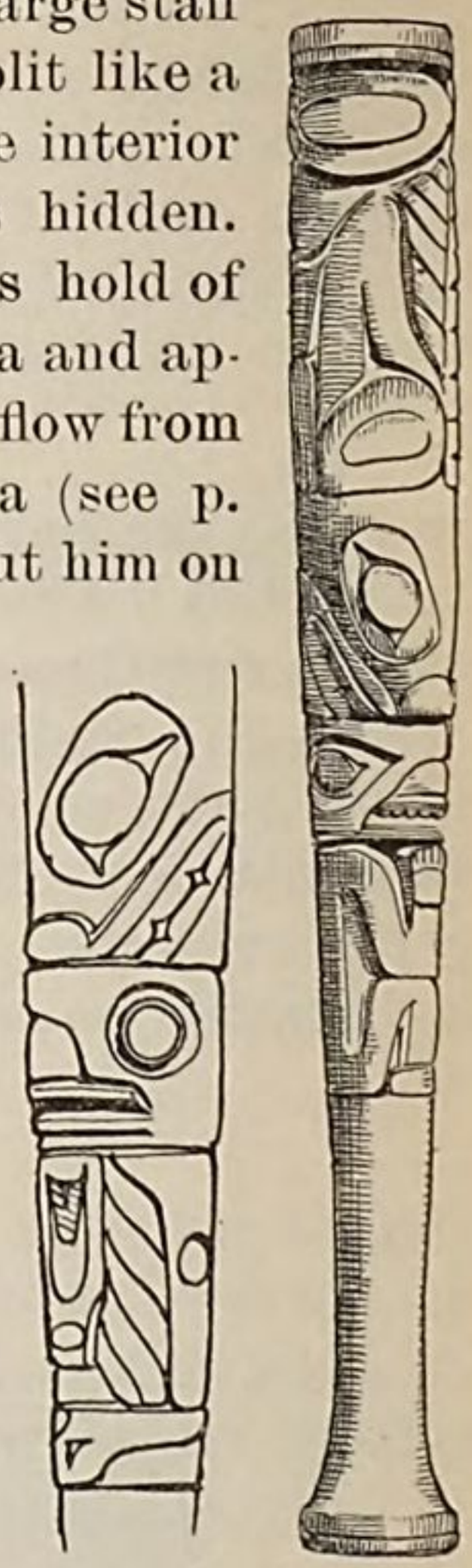


Fig. 50.

BATON REPRESENTING A SEA LION, A BEAR, AND A KILLER WHALE.

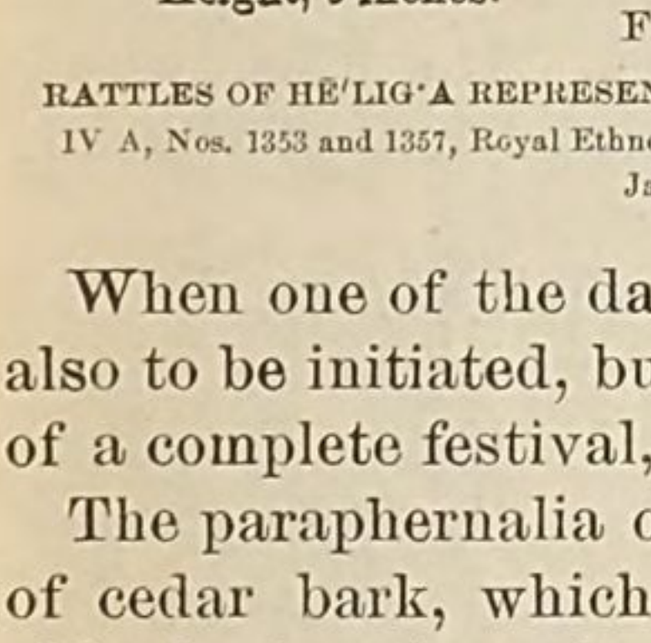
IV A, No. 1949, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

He stays away for four days and his father must make a new festival for him. When the hā′mats'a falls, everybody puts his hand over his eyes and drops his head, crying hā.[1] As the expense of such a festival is very great, the amount equaling the return of the marriage money, but few persons are able to afford a second initiation. While nowadays every effort is made to enable the hā′mats'a's father to give the new festival, it is said that in former times the unfortunate one was killed by the other hā′mats'a, the bear dancers, and the nū′LmaL, often at the instance of his own father.

When a hā′mats'a falls in his dance, it is considered an evil omen, indicating that he will die at an early date.

[1] With sinking tone.

The view taken by the Kwakiutl is evidently that the falling of a hā′mats'a or of another dancer is an indication of either ill will on the part of the spirit, or as a defeat of their spirit by that of another tribe. Thus I was told that at one time the Kwakiutl had invited the Ma′malēleqala for a winter ceremonial. When one of their dancers fell, their own nū′LmaL tried to kill him, and he was rescued with difficulty by the quē′qutsa. The song which was used during his dance was never used again. They believed that the event was proof that the spirit presiding over the winter ceremonial of the Mā′malēleqala was stronger than their own.



Height, 9 inches.

Breadth, 8 inches.

Fig. 51.

RATTLES OF HĒ′LIG·A REPRESENTING THE HEAD OF A DEAD PERSON.
IV A, Nos. 1353 and 1357, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

When one of the dancers of an inferior society falls, he disappears also to be initiated, but his father does not need to go to the expense of a complete festival, as these initiations are much less expensive.

The paraphernalia of the dances consist largely of ornaments made of cedar bark, which is dyed in the juice of alder bark; of masks, whistles, and carvings of various kinds. All of these must not be seen by the profane. If any of these happened to see them, they were killed without mercy. As an example of this, I was told the following incident:

One of the quē′qutsa was preparing a carving to represent the sī′siuL. His daughter happened to see him at work. Then he called her into his room and dug a hole right under the fireplace. He asked her to put her head into his lap, pretending that he wanted to louse her. Then he killed her with a hammer. He put her body into the hole, covered it, and replaced the ashes. His wife looked for the girl, but he did not tell her of what he had done until the following summer, when he fell sick. Then he asked his wife to bury the remains of their daughter. As a survival of this custom, the saying remains which is used by the initiated in warning away the profane: "Go away, else we shall bury you."[1]

Fig. 52.

RATTLE OF HĒ′LIG·A.

Representation of the head of a dead person, out of whose mouth a snake is crawling. Height, 8¼ inches.

IV A, No. 1356, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

By far the greater portion of the winter ceremonial is performed in

[1] Hā′g·a qoē′tax ā′LanÔ′x tsamē′sōL.

a house set apart for this purpose. It is called lō′pEkᵘ (emptied) because it is emptied of everything that is profane. Only when dances are performed, are the uninitiated or the profane allowed to enter the house. They must stay at the left-hand side of the entrance.

Most of the dances are performed in connection with feasts. Others are shown in connection with distributions of property. As during the ceremonial the clans are suspended, the order of seats which prevails in summer is also suspended, and a new arrangement takes place. The seal society have the seats of honor in the rear of the house, and among them the highest hā′mats'a has the first seat, in the middle of the rear of the house. At both sides of the hā′mats'a society sit the bear dancers and other members of the seal society. At the extreme ends of this society sit the nū′LmaL, the messengers of the hā′mats'a. The killer whale and rock cod societies sit in front of the seal society. They are the singers.

The hē′mElk and the whale society sit next to the nū′LmaL—the former to the left of the hā′mats'a, the others to his right. The Koskimo sit next to them near the front corners of the house. The women sit all along the sides of the house in the rear row, the chicken society farthest in the rear, the dam society and the Kē′ki′xalakᵘ in front. The person who gives the feast and all his relatives are in the "kettle corner," the right-hand front corner of the house. The profane sit on the left-hand side of the door. When one tribe has invited another one, all the members of the invited tribe sit in the front part of the sides of the house. The seal society of the hosts sit in the rear, and their singers as described heretofore. The rest of the inviting tribe are in the kettle corner.

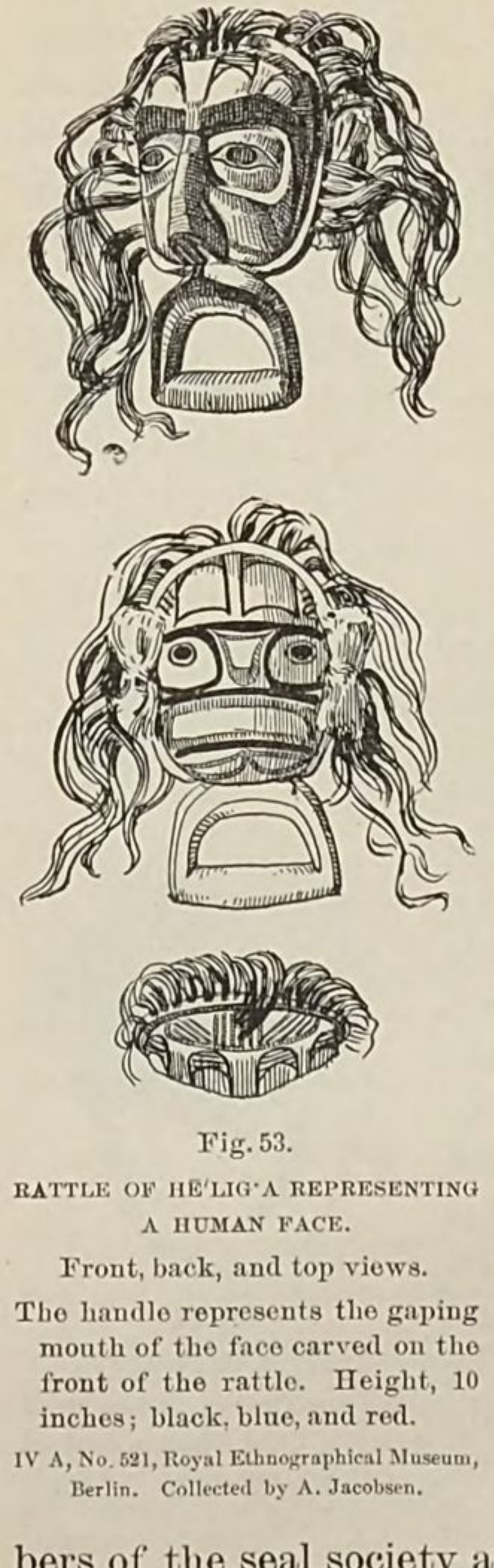


Fig. 53.

RATTLE OF HĒ′LIG'A REPRESENTING A HUMAN FACE.

Front, back, and top views.

The handle represents the gaping mouth of the face carved on the front of the rattle. Height, 10 inches; black, blue, and red.

IV A, No. 521, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

Sometimes at such occasions all the members of the seal society and of the corresponding societies of the other tribes sit in the rear of the house. Then the hā′mats'a of all the tribes sit in the middle—first those of the Kwakiutl, at each side those of the Ma′malēleqala, at their sides those of the Nimkish and Lau′itsîs. The other groups arrange themselves in the same manner, the Kwakiutl members sitting in the rear row nearest the rear of the house; then toward the door follow the Ma′malēleqala, continuing in the next row nearer the fire. Then follow the Nimkish and Lau′itsîs.

The singers sit so arranged that the rear rows are facing the fire while the front rows face backward. In their midst sits the song leader (nâ′qatē) and his two assistants (guā′nuLEmē=sitting at his sides). It is the duty of the song leader to make new songs, to compose new words to old tunes, to learn quickly the songs of the returning novice, and to teach them to the singers. He also gives signals for changes in rhythm and starts the tunes. His office is hereditary in the male line. His assistants call out the words for each verse. The singers are so seated that in front of the board which serves for their back support they can spread their mats, and, when kneeling on these, have in easy reach long planks on which they beat the rhythm with batons. These are generally of split pine wood and are made at the time of opening the feast. They are about 1½ feet long, and the singers before using them roughly smooth one end, which is used as a handle. They either beat downward, holding the baton in their hands stretched forward, or they hold it like a pestle and thump the plank with it. In former times when wood was not easily split on account of lack of steel axes, they kept the batons, which were in consequence also more nicely finished. Nowadays only the song leader and his assistants have carved or painted batons. (Figs. 42–50.) The ordinary crude batons are generally split up at the end of the festival and used as torches for lighting the way home through the darkness of the street. It is a very pretty sight to see the numerous guests going home, each carrying his torch and lighting up the logs and canoes on the beach on the one side and the dark row of houses on the other.

Fig. 54.

RATTLE OF HĒ′LIG·A, SET WITH RED CEDAR BARK, REPRESENTING A CONVENTIONALIZED FACE.

Front and rear views. Height, 11½ inches.

IV A, No. 1360, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

Fig. 55.

RATTLE OF HĒ′LIG·A, SET WITH CEDAR BARK, REPRESENTING A CONVENTIONALIZED FACE.

Height, 10 inches; black.

IV A, No. 1400, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

I will now proceed to describe the ceremonials of various societies.

BaxbakuālanuXsī′waē, as stated above, initiates several dancers, the most important of which is the hā′mats'a, or the cannibal. He is possessed of the violent desire of eating men. The novice is taken away by this spirit and is supposed to stay at his house for a long time. The period of his absence extends over three or four months, during which time he actually stays in the woods. In the middle of this time

he reappears near the village and his sharp whistle and his cries, "hāp, hāp, hāp" (eating, eating, eating), are heard. Then he comes back to fetch his k·î'nqalaʟala, who must procure food for him. (See p. 399.)

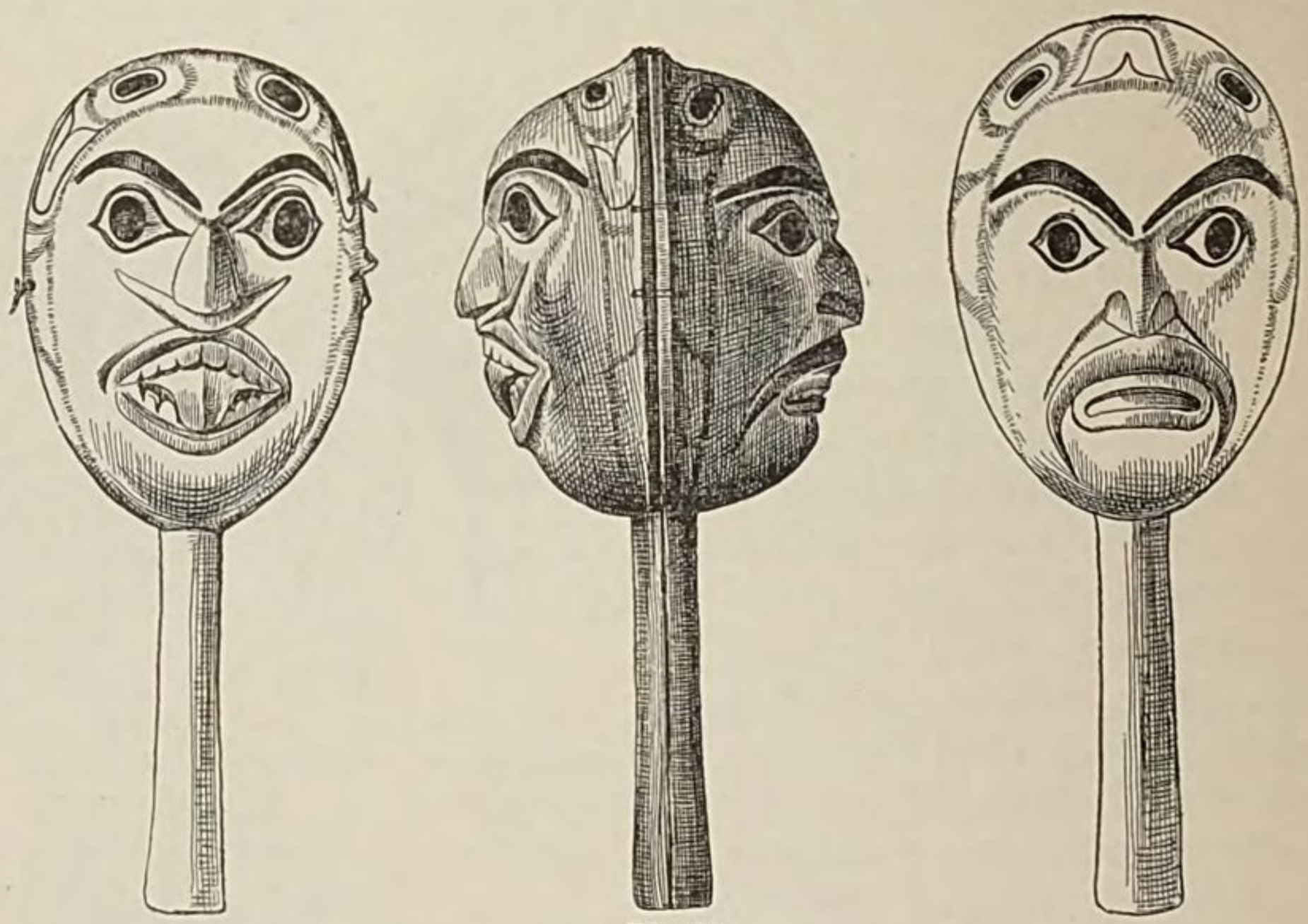


Fig. 56.

RATTLE OF HĒ'LIG'A, PROBABLY OF HAIDA MANUFACTURE.

The front represents a sea monster with a bear's head and a whale's body, which is indicated by the fins on the face; the back represents a man. Height, 9½ inches; black and red.

IV A, No. 864, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

The k·î'nqalaʟala is always one of his female relatives. Finally he returns and attacks every one upon whom he can lay his hands. He

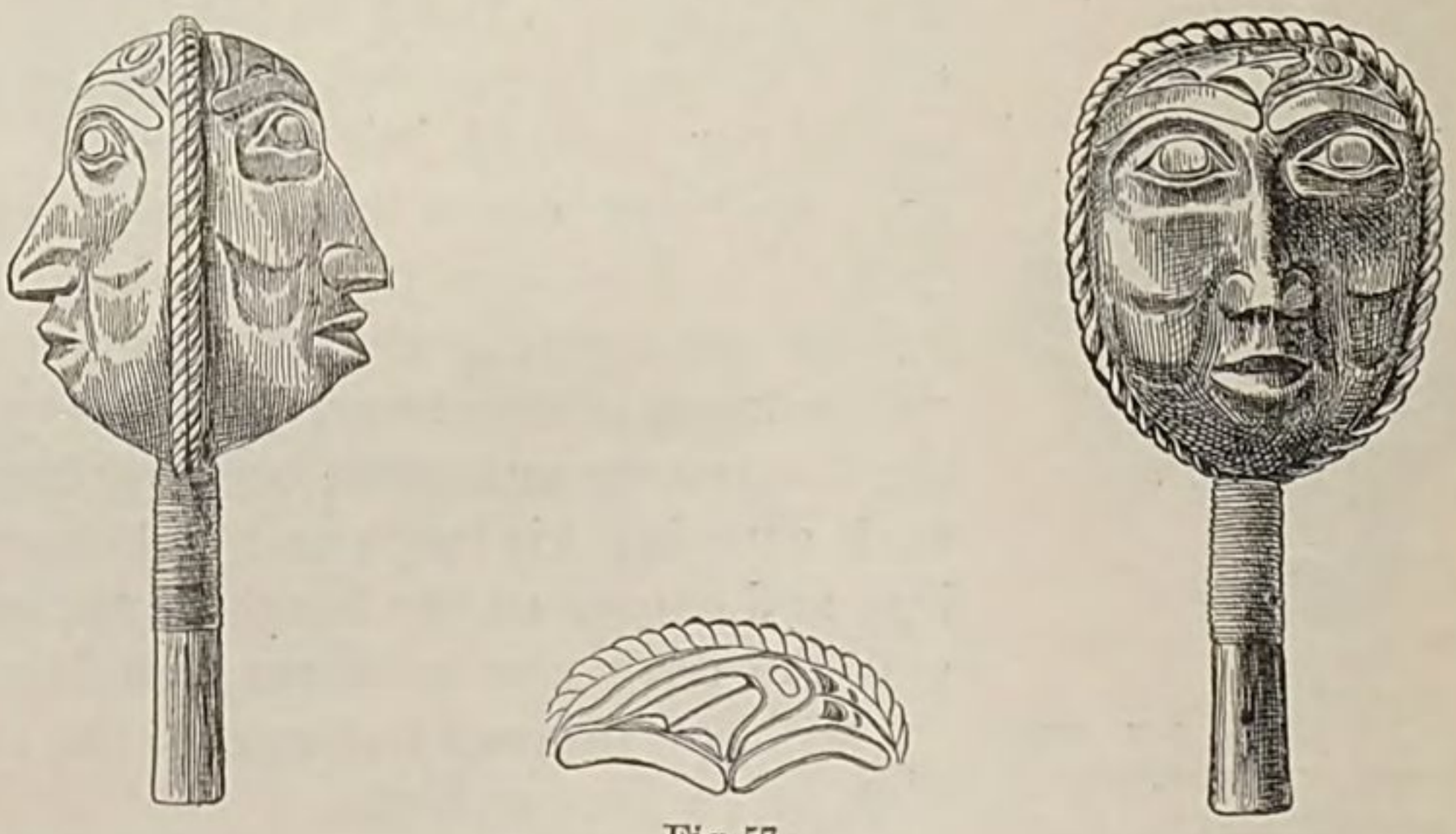


Fig. 57.

RATTLE OF HĒ'LIG'A.

Representations of two faces painted with the design of the killer whale and surrounded by a ring representing a cedar bark ring. The faces may each represent the head of a member of the killer whale society. Height, 7½ inches; red on brown wood.

IV A, No. 570, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

bites pieces of flesh out of the arms and chests of the people. As soon as he arrives, the servants of the hā'mats'a, the hē'lig·a (healers) or sâ'laʟila, of whom the Kwakiutl have twelve in all, run up to him,

swinging rattles, the sound of which is supposed to pacify the nā′mats'a. This office is hereditary in the male line, and either four or six of them must accompany the hā′mats'a whenever he is in an ecstasy. They surround him in a close circle in order to prevent him from attacking the people and utter the pacifying cries "hōî′p, hōî′p." The rattles of the hē′lig·a are always carved with a design which originally represented a skull. Figures 51 and 52 show this design clearly, but it often degenerates into the representation of a conventional face, and in some cases it has simply a rounded shape, and an animal is carved on its face. (Figs. 53–59.) I do not know if the beautiful rattles which are used by the hē′lig·a of the Kwakiutl, but which were made by the Hē′iltsuq and represent the thunder bird on a round rattle (fig. 60), had originally a different meaning. In olden times, when the hā′mats'a was in a state of ecstasy, slaves were killed for him, whom he devoured. The following facts were observed by Mr. Hunt and Mr. Moffat in the early days of Fort Rupert: When a hā′mats'a had returned from the woods, a slave, a man of the Nanaimo tribe, named Xu′ntEm, was shot. They saw him running down to the beach, where he dropped. Then all the nū′LmaL of the Kuē′xa tribe went down to the beach carrying knives and lances. The bear dancers and the hā′mats'as followed them. The nū′LmaL cut the body with their knives and lances and the hā′mats'as squatted down dancing and crying "hāp, hāp." Then the bear dancers took up the flesh and, holding it like bears and growling at the same time, they gave it to the highest hā′mats'a first and then to the others.[1] In memory of this event a face representing BaxbakuālanuXsī′waē was carved in the rock on the beach at the place where the slave had been eaten. The carving is done in sandstone, which was battered down with stone

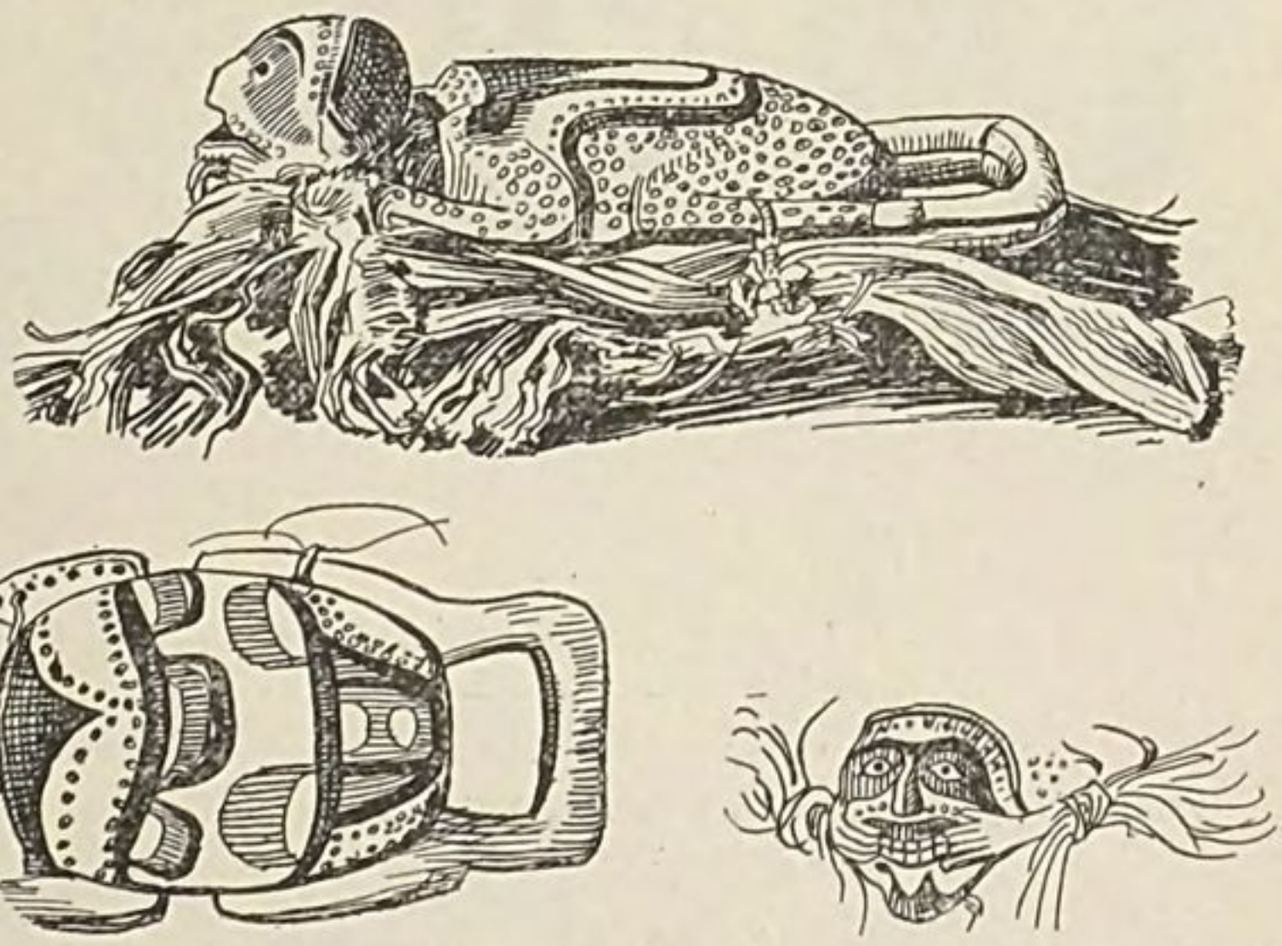


Fig. 58.

RATTLE OF HĒ′LIG·A.

Representation of a being with a human head, hands, and feet, and a dorsal fin. The feet form the handle of the rattle, which is set with cedar bark. Length, 11 inches; black and blue.

IV A, No. 1399, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

[1] Mr. George Hunt, who told me this story as reported to him by his father, who had been an eyewitness, added the following remarks, which are of interest as elucidating some of the views of these tribes. The slave's wife was at that time in the fort. She went out on the gallery and called out to the hā′mats'a: "I will give you five years to live. The spirit of your winter dance ceremonial is strong, but mine is stronger. You killed my husband with gun and bullet, and now I will kill you with the point of my tongue." After five years all those who had taken part in the murder were dead.

hammers (Plate 23). Near this rock carving there are a number of others and much older ones (Plates 24–26, fig. 61). The Indians have no recollection of the incidents which they are to commemorate. They say that they were made at the time before animals were transformed into men.

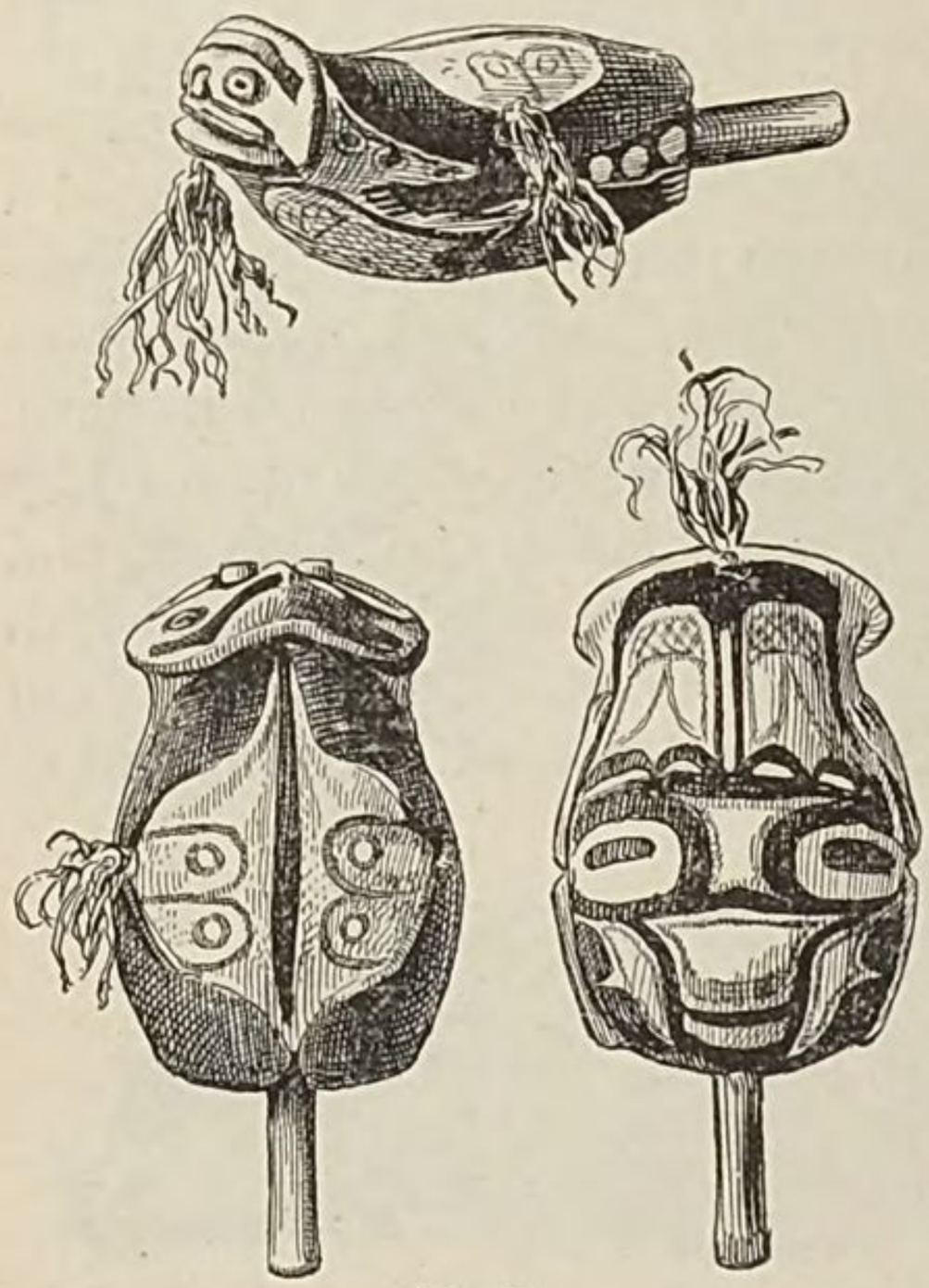


Fig. 59.

RATTLE OF HE'LIG'A.

Representation of a being with a human head, hands, and feet, and dorsal fins. Length, 14 inches; green, black, red.

IV A, No. 424, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

I received another report of the killing of a slave. A female slave was asked to dance for the hā'mats'a. Before she began dancing she said: "Do not get hungry, do not eat me."[1] She had hardly said so when her master, who was standing behind her, split her skull with an ax. She was eaten by the hā'mats'a. This happened in Newettee, and Q'ōmEna'kula, who participated in the performance, was living until a couple of years ago. He told me that it is exceedingly hard to eat fresh human flesh, much more so than to eat dried corpses. The bones of the killed slaves were kept at the north side of the house, where the sun does not shine upon them. During the fourth night they were taken out of the house, tied up, weighted with a stone, and thrown into deep water, because it is believed that if they were buried they would come back and take their master's soul.

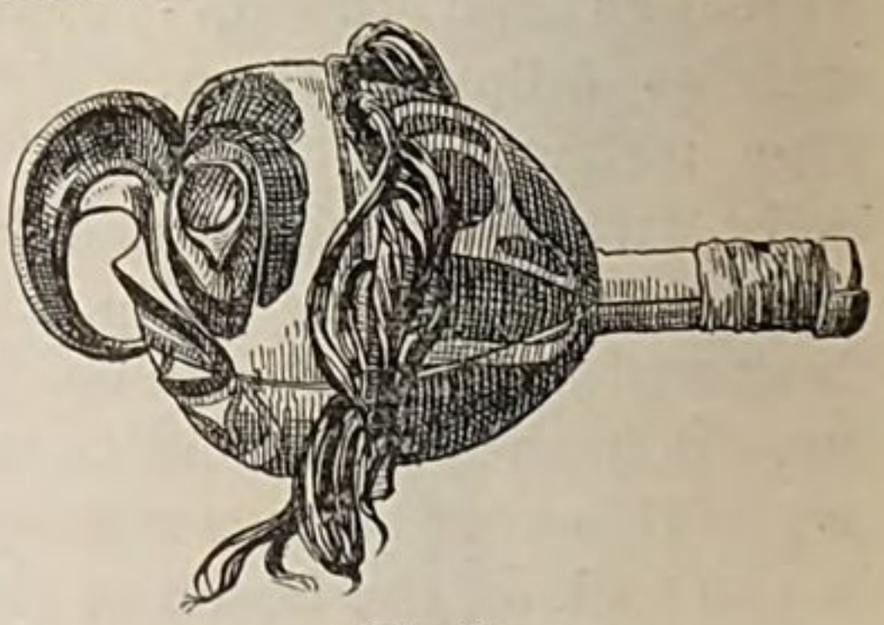


Fig. 60.

RATTLE OF HE'LIG'A.

Length, 14½ inches; black and red.

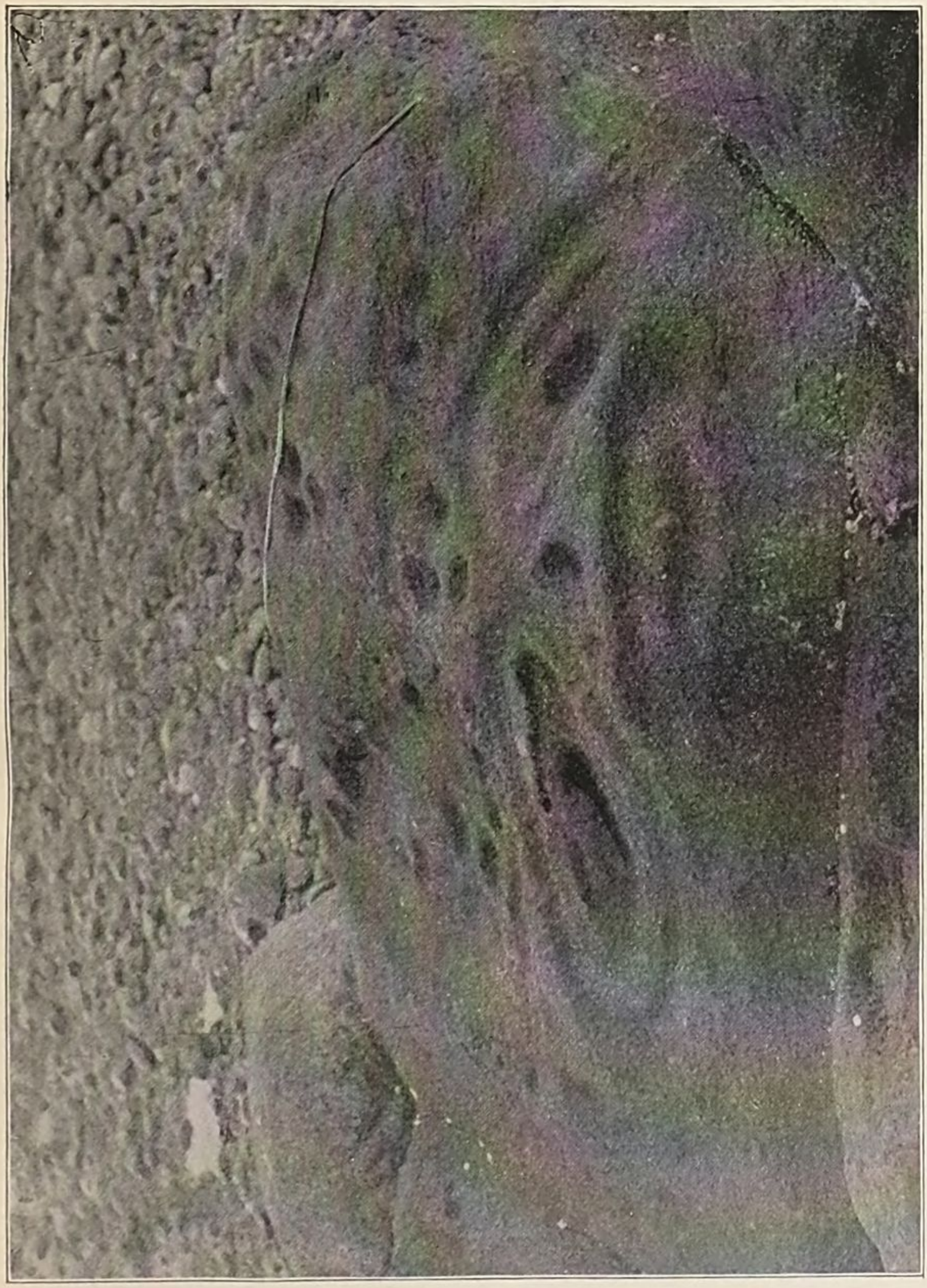
IV A, No. 522, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

When the hā'mats'a had bitten a piece out of the arm of one of his enemies, he drank hot water after having swallowed the flesh. It was believed that this would result in the inflammation of the wound. Nowadays, when the ceremonies have lost much of their former cruelty, they do not actually bite the piece of flesh out of the arm, but merely pull the skin up with their teeth, sucking hard so as to remove as much blood as possible, and then with a small sharp knife cut off secretly a piece of skin. This is not swallowed, but hidden behind

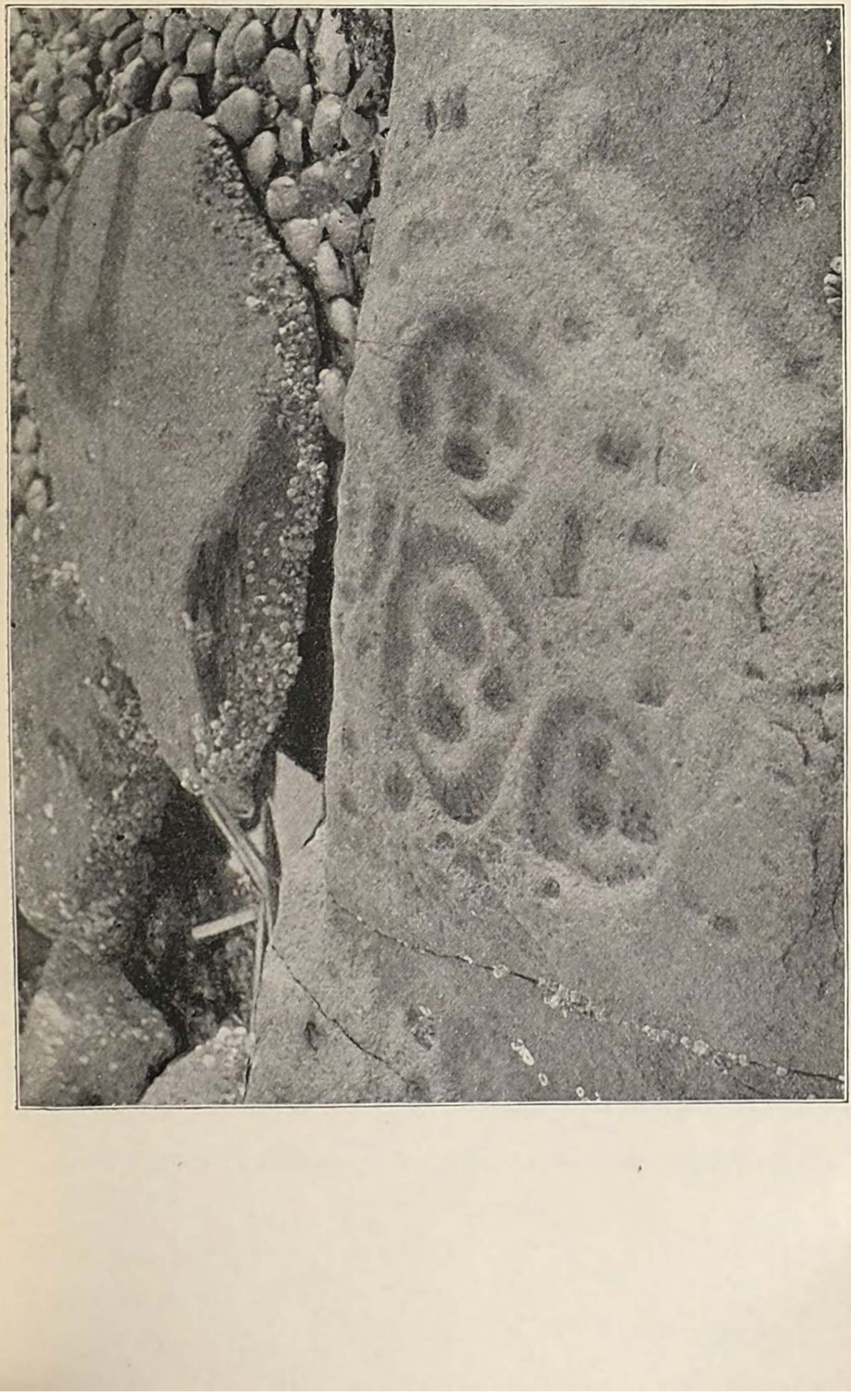
[1] Qoa'la mE'sala g·ā'xEn.
Do not be hungry to me.

ROCK CARVING ON THE BEACH AT FORT RUPERT, REPRESENTING THE FACE OF BAXBAKUÂLANUXSĪ'WAĒ.

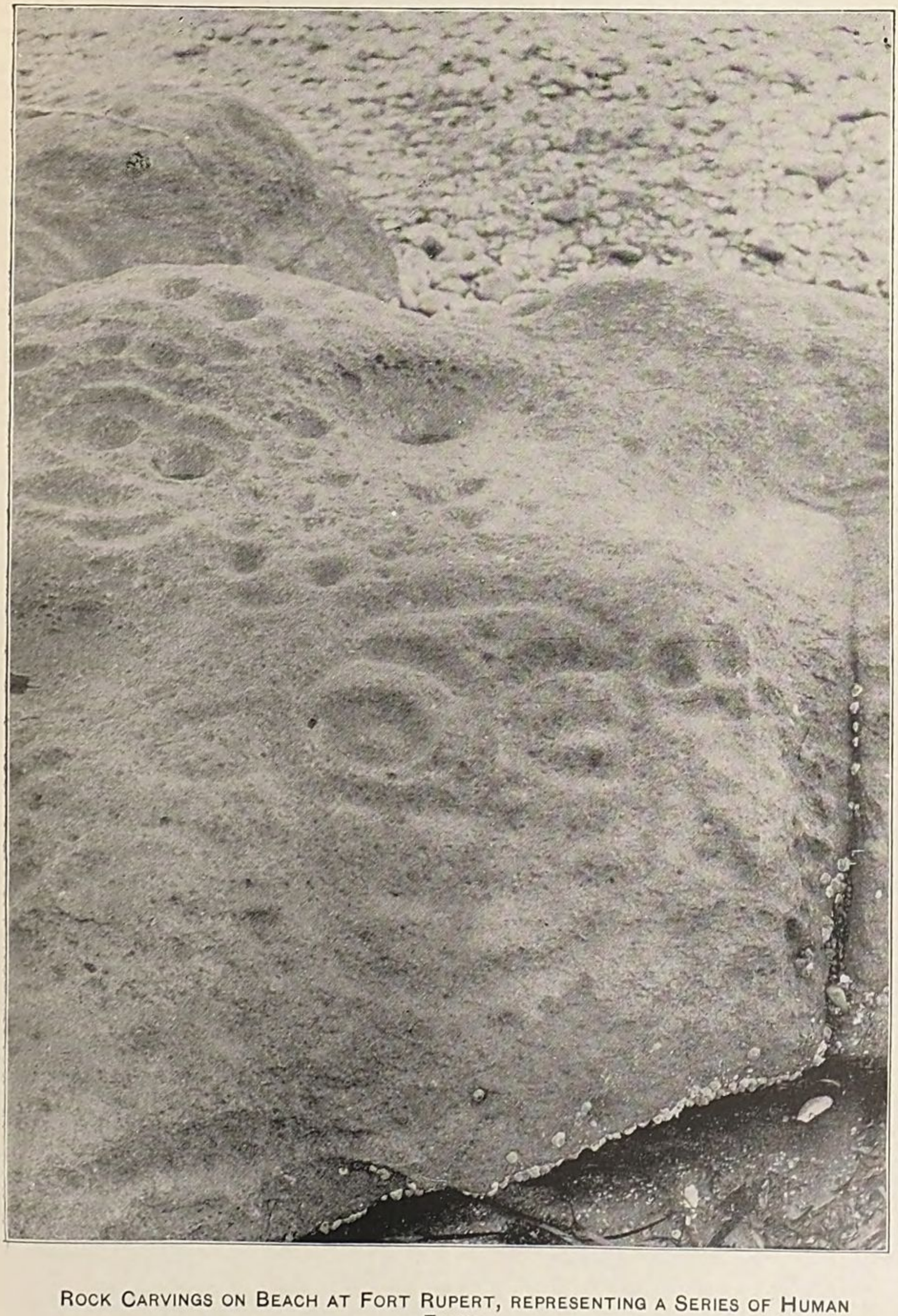
From a photograph.



ROCK CARVINGS ON BEACH AT FORT RUPERT, REPRESENTING THE SEA MONSTER IA'K'IM AND A NUMBER OF SMALL FACES.
From a photograph.

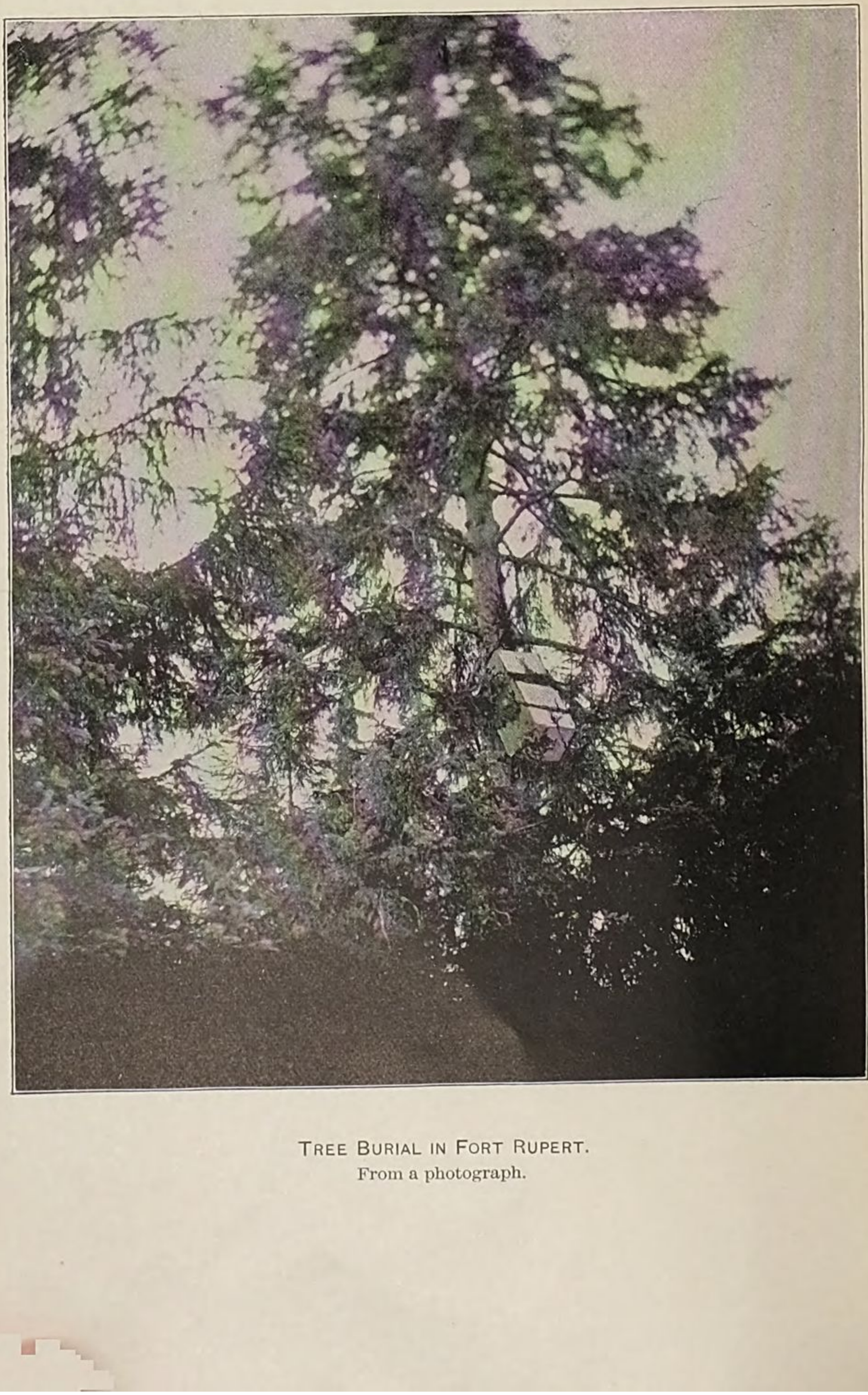


ROCK CARVINGS ON BEACH AT FORT RUPERT, REPRESENTING A SERIES OF FACES.
From a photograph.



ROCK CARVINGS ON BEACH AT FORT RUPERT, REPRESENTING A SERIES OF HUMAN FACES.

From a photograph.



TREE BURIAL IN FORT RUPERT.
From a photograph.

the ear until after the dance, when it is returned to the owner, in order to assure him that it will not be used against him for purposes of witchcraft.

Besides devouring slaves, the hā′mats'as also devour corpses. When a new hā′mats'a, after being initiated, returns from the woods he will sometimes carry a corpse, which is eaten after his dance. The bodies are prepared for this ceremony. The skin is cut around the wrists and ankles, as they must not eat the hands and feet. It is believed that else they would die immediately. The hā′mats'a must use for this ceremony the corpse of one of his deceased relatives, which the hē′lig·a must prepare. The Kwakiutl used to bury their dead on trees. The body was placed in a box, and these boxes were placed on branches a considerable distance up a tree. There the boxes were piled one on top of the other (Plate 27). The bodies, when so exposed to the action of the freely circulating air, mostly mummify. A corpse is taken down from the tree and is soaked in salt water. The hē′lig·a takes hemlock twigs, the leaves of which have been removed, and pushes them under the skin, gradually removing all the decayed flesh until nothing but the skin remains. After this is done the body is placed on top of the small hut in which the novice (g·ī′yakila) is living while he is staying in the woods. The hands of the body hang down. Its belly is cut open and spread with sticks. The hā′mats'a keeps a fire under it and smokes it. Four days before he returns to the village he sends for all the old hā′mats'as. When they come, he tells them: "These are my traveling provisions, which I received from BaxbakuālanuXsī′waē."[1] He asks them to point out what shares they desire to have when he will return. They take the body down and place it on a clean mat. Each points out what he desires to have. His return will be described later on (p. 527). His k·î′nqalaLala returns with him. She carries the corpse which has been prepared. She goes backward, facing the hā′mats'a. When she reaches the right side of the fire, the hā′mats'a enters the house. He stoops so that his face is close to the ground. On entering, he turns four times, descends to the middle of the house, and when he is four steps away from the door, he turns again four times. When the

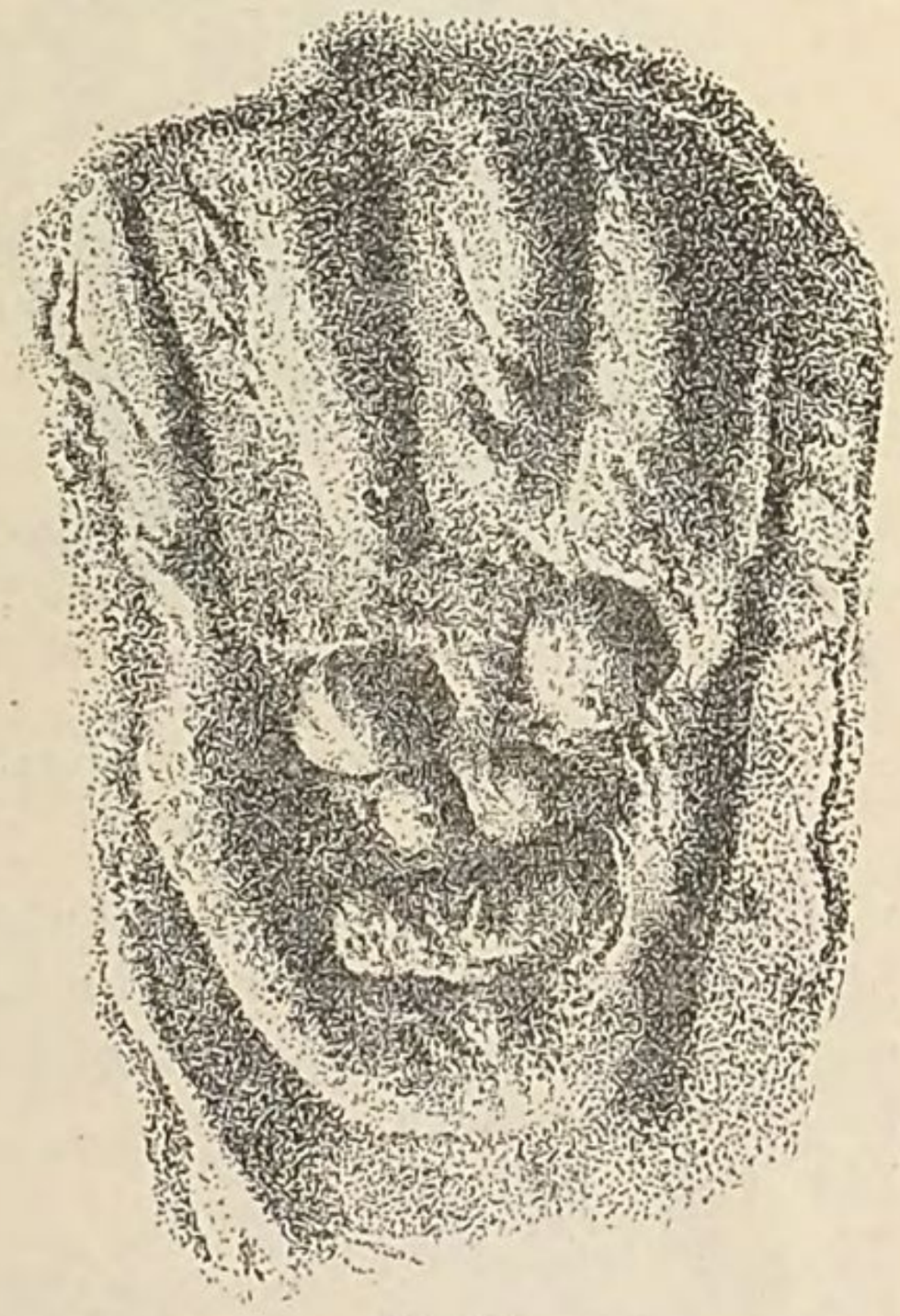


Fig. 61.

ROCK CARVING AT FORT RUPERT.

Height, 15 inches.

[1] G·amEn g·iwu′lkoa da g·ū′Lila yūs BaxbakuālanuXsī′waē.
This my traveling provisions, the food given by BaxbakuālanuXsī′waē.

k·î′nqalaʟala reaches the rear of the house, she turns again. A drum is placed in the middle of the rear of the house, bottom up. The k·î′nqalaʟala pretends to put the corpse on the drum, but walks past it, the hā′mats'a following her. At the door she turns again, proceeds around the fire, and when she reaches the drum a second time, she turns again and pretends to put the body down. At this time all the old hā′mats'as, who have been outside the house, jump down from the roof and rush in through the doors. They are all naked and follow the k·î′nqalaʟala in a state of high excitement. When they have run around the fire four times, the body is put down on the drum.

Fig. 62.

DANCE OF THE HĀ′MATS'A.

From a sketch.

The master of ceremonies (see p. 501) begins to cut it and distributes the flesh among the hā′mats'a. But first the k·î′nqalaʟala takes four bites. The people count how many bites each of them swallows. They are not allowed to chew the flesh, but they bolt it. The k·î′nqalaʟala brings them water to drink in between.

After this part of the ceremony is finished, the hē′lig·a rise, each takes one hā′mats'a at the head, and they drag them to the salt water. They go into the water until it reaches up to their waists, and, facing the rising sun, they dip the hā′mats'a four times under water. Every time he rises again he cries hāp. Then they go back to the house. Their excitement has left them. They dance during the following nights. They look downcast and do not utter their peculiar cries, hāp, hāp. They do not dance squatting, but in an erect

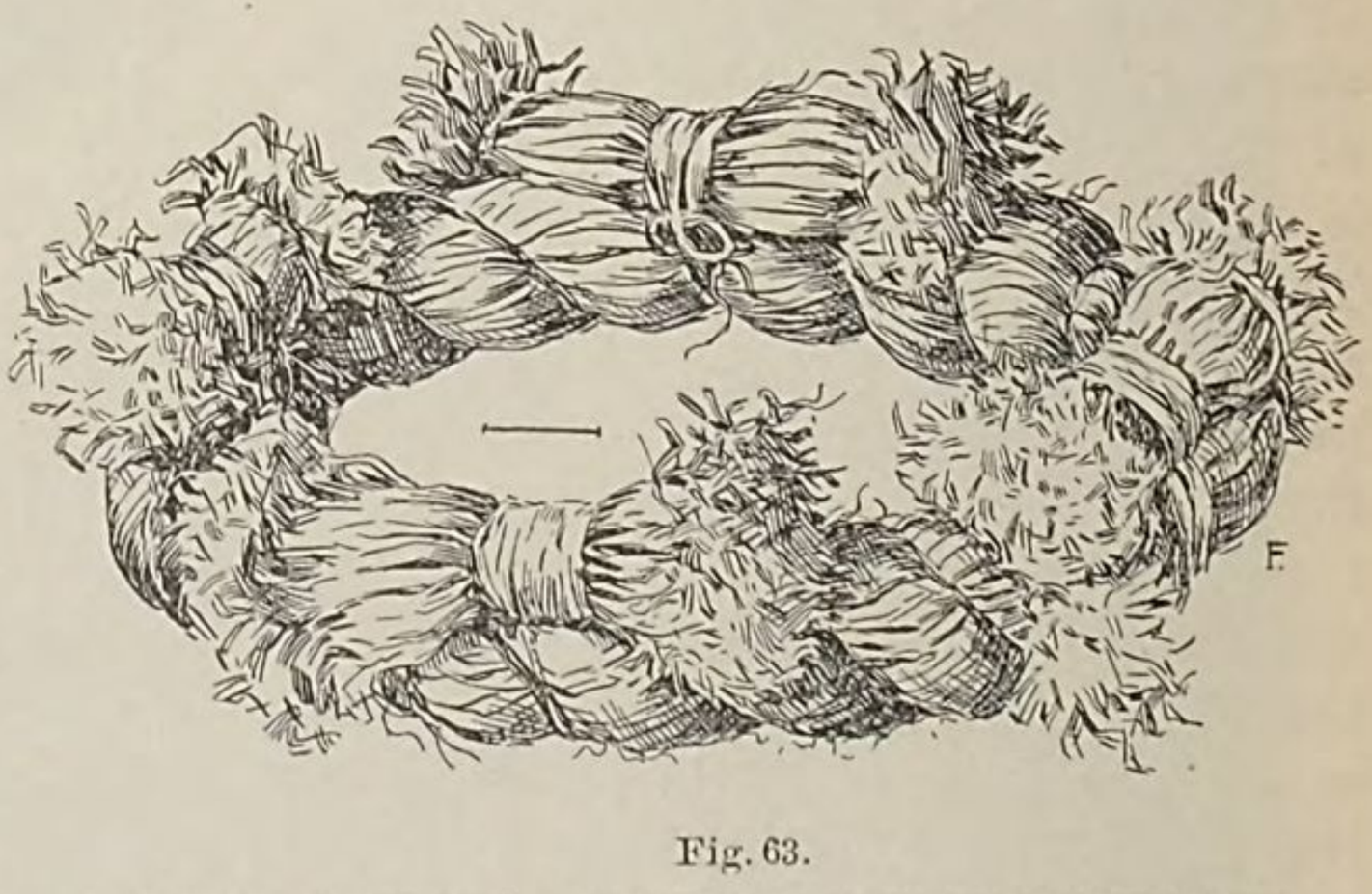


Fig. 63.

HEAD RING OF HĀ′MATS'A, ORNAMENTED WITH FOUR CROSSPIECES.

Cat. No. 129515, U. S. N. M. Collected by F. Boas.

position. After the close of the ceremonial the hā'mats'a by the payment of blankets indemnifies those whom he has bitten and the owner of slaves whom he has killed.

The ceremonial of the return of the hā'mats'a will be described later on, when an account of the whole winter ceremonial will be given. My object here is to describe the manner of dancing, so that I do not need to refer to the subject again later on.

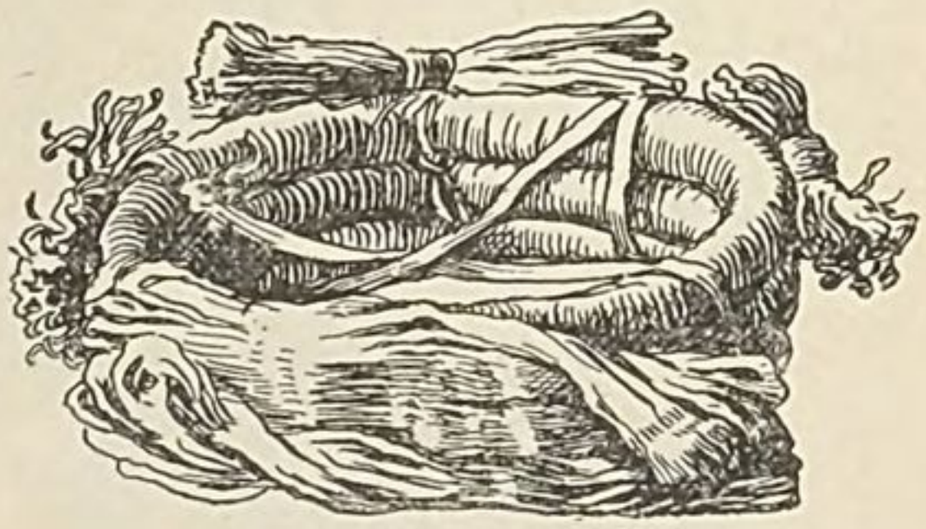


Fig. 64.

HEAD RING OF HĀ'MATS'A.

IV A, No. 580, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

The hā'mats'a has two ways of dancing—one representing him in a stage of greatest excitement, the other when he is becoming pacified. His first dance and sometimes part of the second are danced in the former position, the others are danced in the second position. The first dance represents him as looking for human flesh to eat. He dances in a squatting position, his arms extended sideways and trembling violently (fig. 62). He first extends them to the right, then to the left, changing at the same time the position of the feet so that when extending his arms to the left he rests on his left foot and the right foot is extended backward; when extending his arms to the right, he rests on his right foot and the left foot is extended backward. Thus he moves on slowly with long steps. His head is lifted up, as though he was looking for a body that was being held high up in front of him. His eyes are wide open, his lips pushed forward, and from time to time he utters his terrible cry, hāp. His attendants surround him, and two of them hold him at his neck ring that he may not attack the people. When in the rear of the house, he suddenly changes his position, putting his hands on his hips and jumping in long leaps with both legs at the same time, his face still bearing the same expression. In this position he turns in the rear of the fire. Thus he continues his four circuits, changing

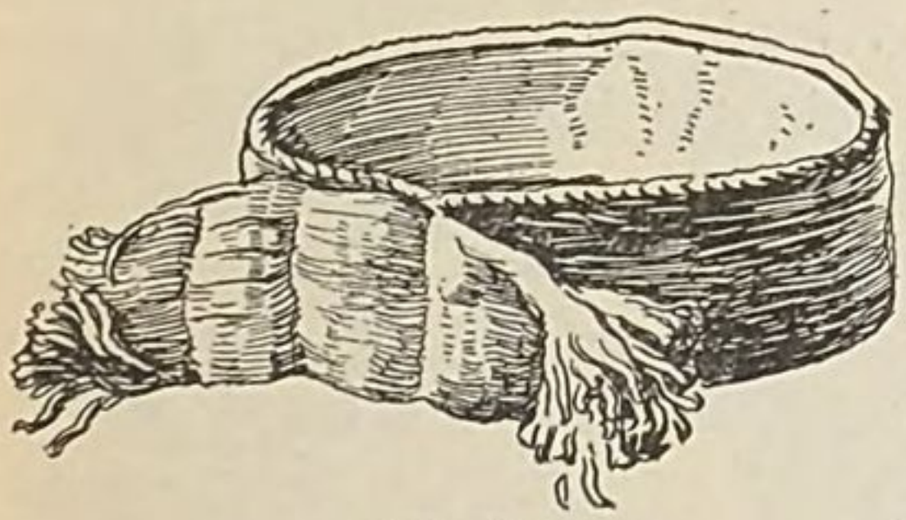


Fig. 65.

HEAD RING OF HĀ'MATS'A.

IV A, No. 578, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

Fig. 66.

HEAD RING OF HĀ'MATS'A.

Front crosspiece representing the milky way.

IV A, No. 6878, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

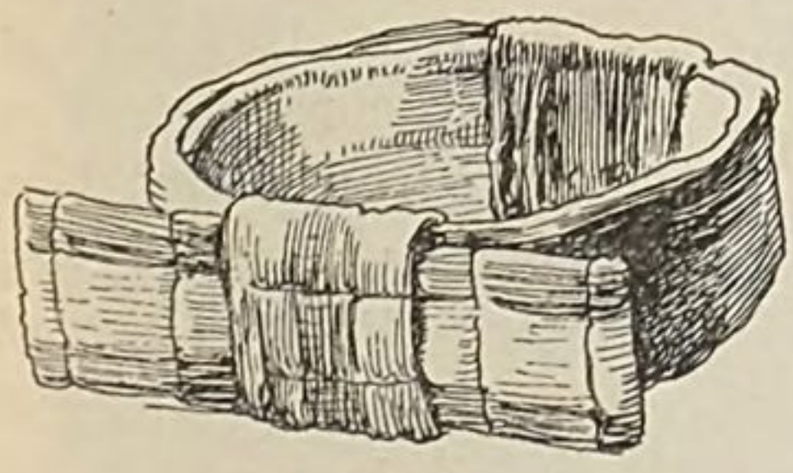


Fig. 67.

HEAD RING OF HĀ'MATS'A.

IV A, No. 579, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

from time to time from the slow trembling movement to the long leaps. During this time his k·î′nqalaʟala—if he is a novice—dances backward in front of him. She stands erect and holds her hands and forearms extended forward as though she was carrying a body for the hā′mats'a to eat. Then his eyes are directed to her hands, which she keeps moving up and down a little with each step. Her open palms are turned upward. In his second dance the hā′mats'a dances standing erect. While in his first dance he is naked, he is now clothed in a blanket. Now he holds his forearms upward, the elbows being near his flanks, the palms forward, the fingers lightly bent. His hands are still trembling violently. His dance consists of rhythmical steps coincident with the beats of the batons. He takes very high steps, so that his knees almost touch his chest. When raising one foot, he bends at the same time the knee of the other leg, and thus drops his trunk considerably without changing his position (Plate 28). He always puts down the whole sole of his foot.

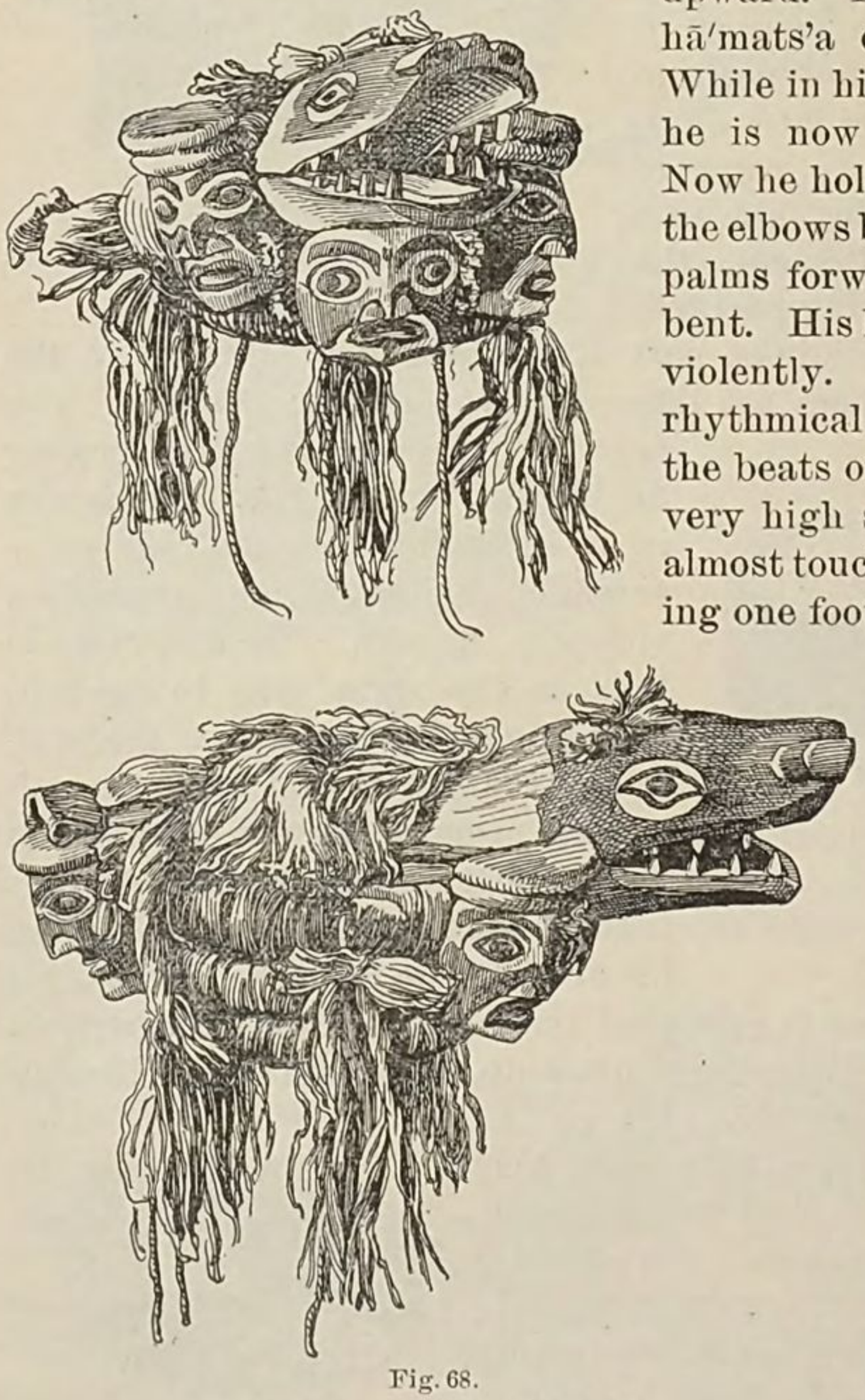


Fig. 68.

LARGE HEAD RING OF HĀ′MATS'A.

Front and side view.

IV A, No. 554, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

When he first returns from his initiation, he wears a head ring, neck ring, waist ring, bracelet, and anklets made of hemlock branches. The form of these rings varies according to the legend from which the hā′mats'a derives his origin. While most of them have plain hemlock rings, one hā′mats'a of the Koskimo has his set with small rings of white peeled twigs, which set off clearly against the dark green ring of balsam pine (see p. 595).

The painting of the face of the hā′mats'a also depends upon the legend from which he derives his origin. Most of them have their faces painted black all over, while others have two curved red lines on each cheek running from the corner of the mouth to the ear in a wide curve

DANCE OF THE HĀ′MATS'A.

The peculiar head and neck ring of the dancer were obtained from the Tlingit, his grandmother being of the Tongass tribe.

From a photograph.

which is concave on the upper side. This, it is said, is where Baxbakụ-ālanuXsī′waē rubbed off the hā′mats'a's skin, or to indicate that they are living on blood. According to the legend, the various hā′mats'as become excited by seeing certain objects or by hearing them mentioned. All of these refer to death. The exciting object for one hā′mats'a is the

Fig. 69.

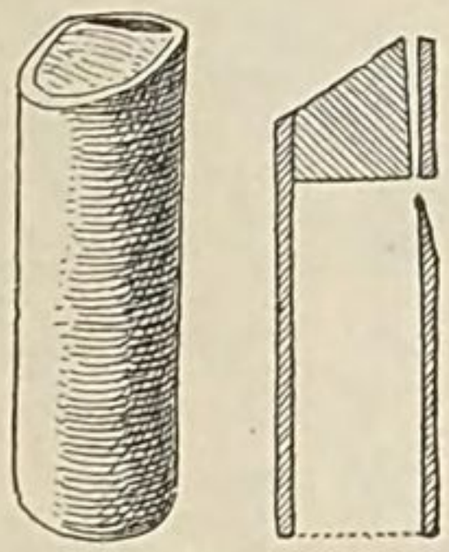


Fig. 70.

Fig. 71.

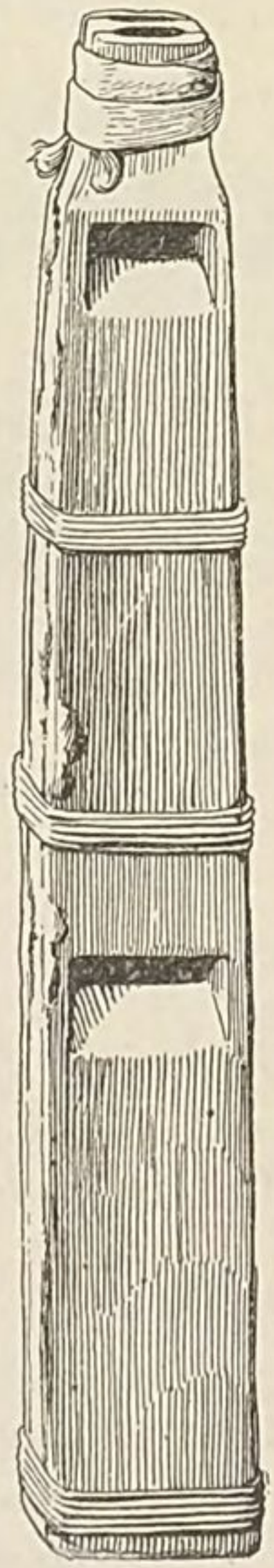


Fig. 74.

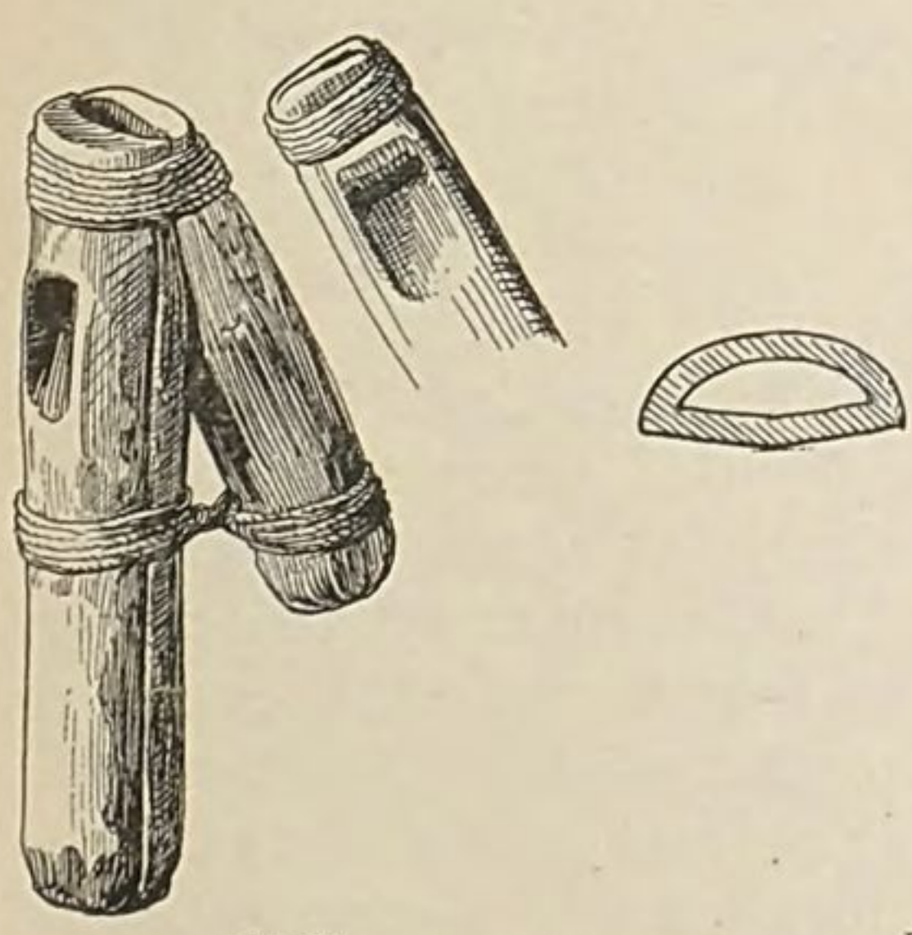


Fig. 72.

Fig. 73.

Figs. 69–73.

WHISTLES OF HĀ′MATS'A.

Fig. 69, double whistle; fig. 70, bone whistle; fig. 71, whistle of five voices; fig. 72, double whistle; fig. 73, single whistle.

Scale $\frac{1}{4}$.

IV A, Nos. 1729*a*, 6857, 1730*d*, 1729*b*, 1729*c*, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen and F. Boas.

Fig. 74.

DOUBLE WHISTLE, WITH FOUR VOICES.

Scale $\frac{1}{4}$.

IV A, No. 1730*e*, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

ghost or corpse; for another one, skulls; for still others, "a head cut off" or maggots or x·ā′wayu (open door). Whenever any of these words occur in a song, or when a dance, figure, or painting is shown representing these objects, the hā′mats'a who, according to his legend, is affected by them falls into a state of ecstasy.

If the dancer is not a novice, he dances the first dance with his cedar bark ornaments, which the new hā′mats'a does not wear until his fourth dance. These consist of a heavy crown of plated cedar bark and a neck ring to correspond, anklets, and bracelets (figs. 63–68).

The head ring fig. 63 is set with four crosspieces. These crosspieces designate the gifts of the spirits who have initiated the cannibal. The front piece represents the milky way, the cannibal pole of BaxbakuālanuXsī′waē, the two lateral pieces represent the hō′Xhokᵘ. The rear crosspiece is said to be merely an ornament. Some hā′mats'as wear a bear skin which is set with the scalps of the slaves whom he has eaten or of the enemies whom he has slain. The symbolic meaning of a number of crosspieces will be described in detail further on (p. 449).

Fig. 75.

PAINTING ON THE FRONT OF A MĀ′WIL, REPRESENTING THE FACE OF BAXBAKUĀLANUXSĪ′WAĒ.

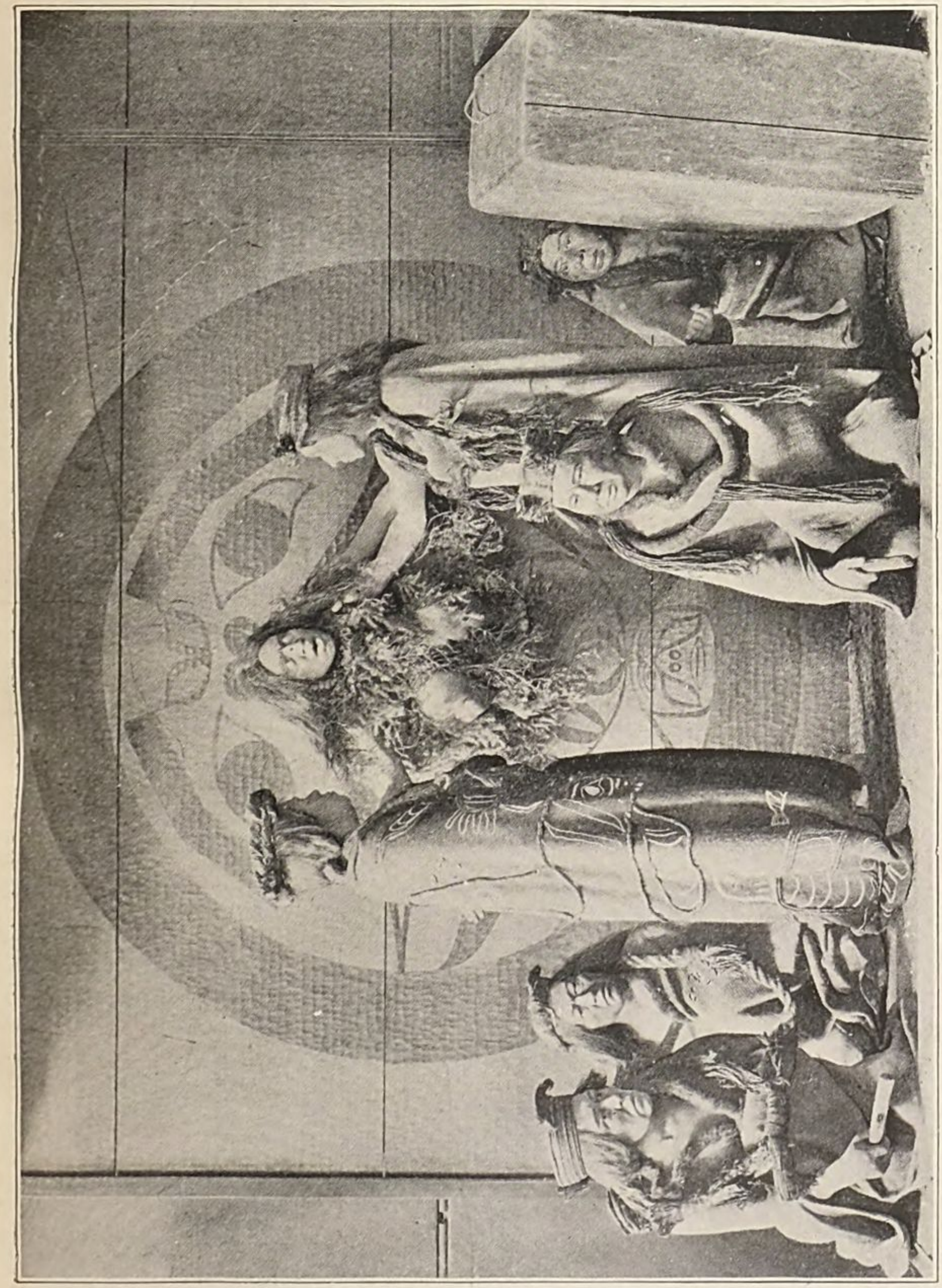
From a sketch.

During the dances of the hā′mats'a whistles are heard (figs. 69–74), which represent the voices of the spirits. Most of these whistles are small. They are made of red cedar. A few are made of bone.

After his first dance, the hā′mats'a disappears in a room set apart for this purpose in the rear of the house. It is called the mā′wiL, and is supposed to be the house of BaxbakuālanuXsī′waē. Its front is painted with designs which represent either the face of BaxbakuālanuXsī′waē himself or that of his servant the raven. The top of the front is set with fringes of red cedar bark (fig. 75). The room is always so arranged that when the hā′mats'a reappears, he comes out of the mouth of the painting on its front. Plate 29 shows the hā′mats'a coming out of the secret room, which is painted with the design of the raven. His attendants, as soon as he appears, run up to the secret room and hold the hā′mats'a at his neck ring. Then he comes forward and performs his dance.

This room is used only by the novice. For him also a high pole is erected in the middle of the rear of the house. It is called the ha′msp'ēq, the cannibal pole. It is a mast from 30 to 40 feet high, which is wound with red cedar bark. At the top is a short crosspiece about 4 feet in length. The cedar bark extends up to it so that it forms a triangle at the top of the pole. Sometimes a triangle painted with the face of BaxbakuālanuXsī′waē is fastened to it instead.

As mentioned before, the novice after his first dance disappears into his secret room. Soon his cries are heard again, and he is seen coming out backward at the side of the mā′wiL. He wears the mask of the raven, Qoā′qoaXualanuXsī′waē (fig. 76), which it is supposed is growing



HĀ'MATS'A COMING OUT OF SECRET ROOM.

From a photograph of a group in the U. S. National Museum.

Fig. 1.

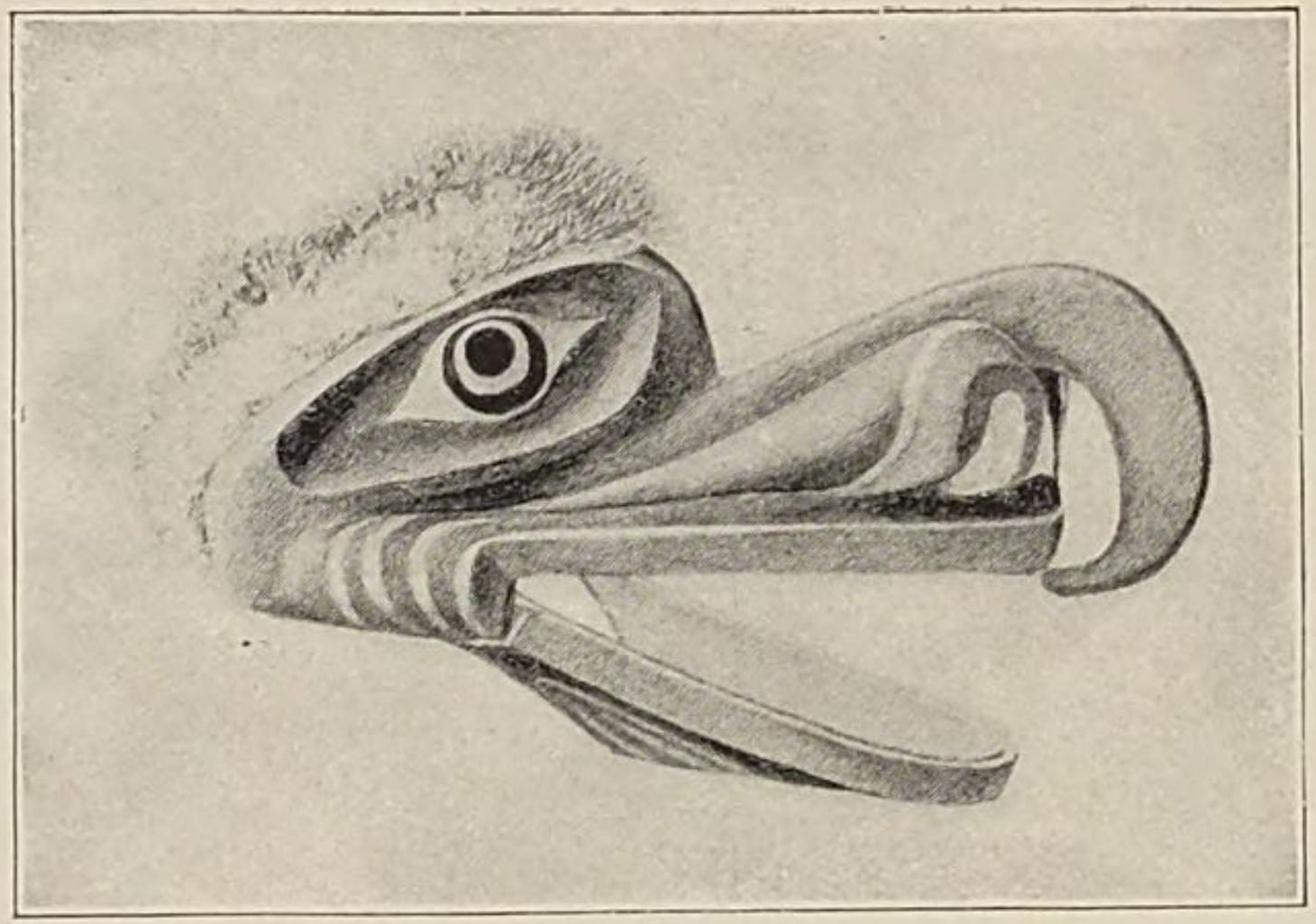


Fig. 2.

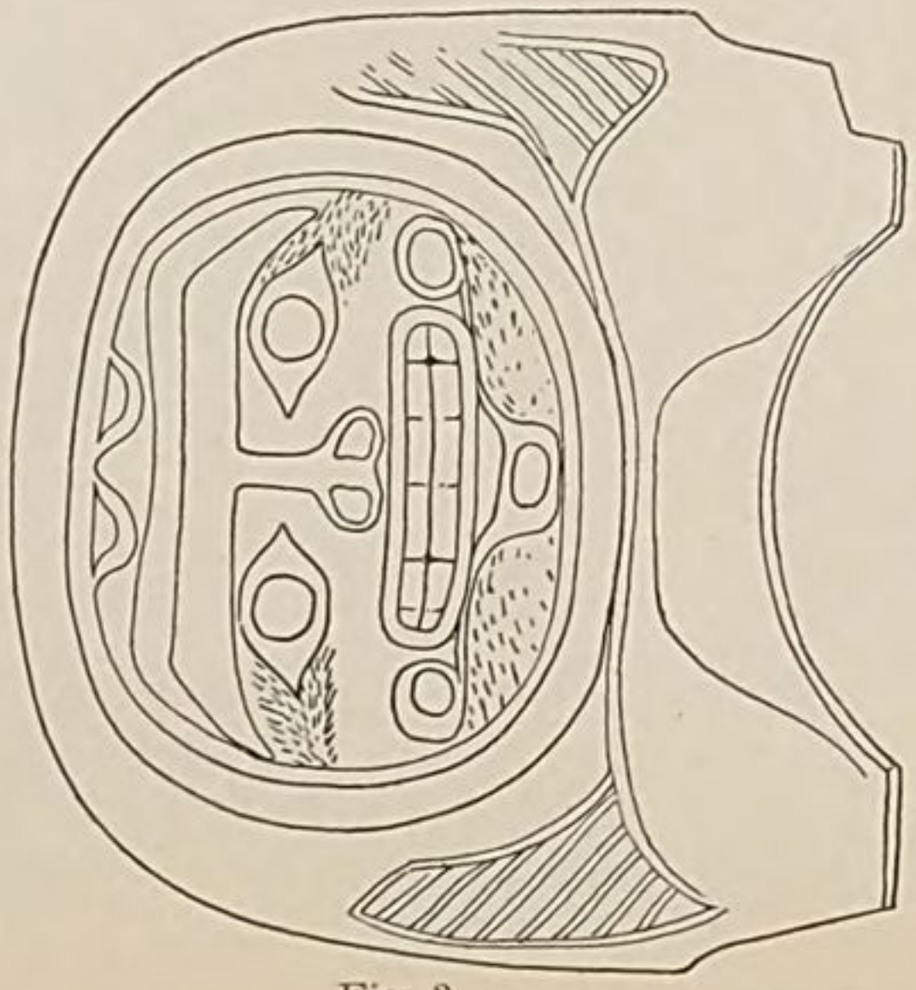


Fig. 3.

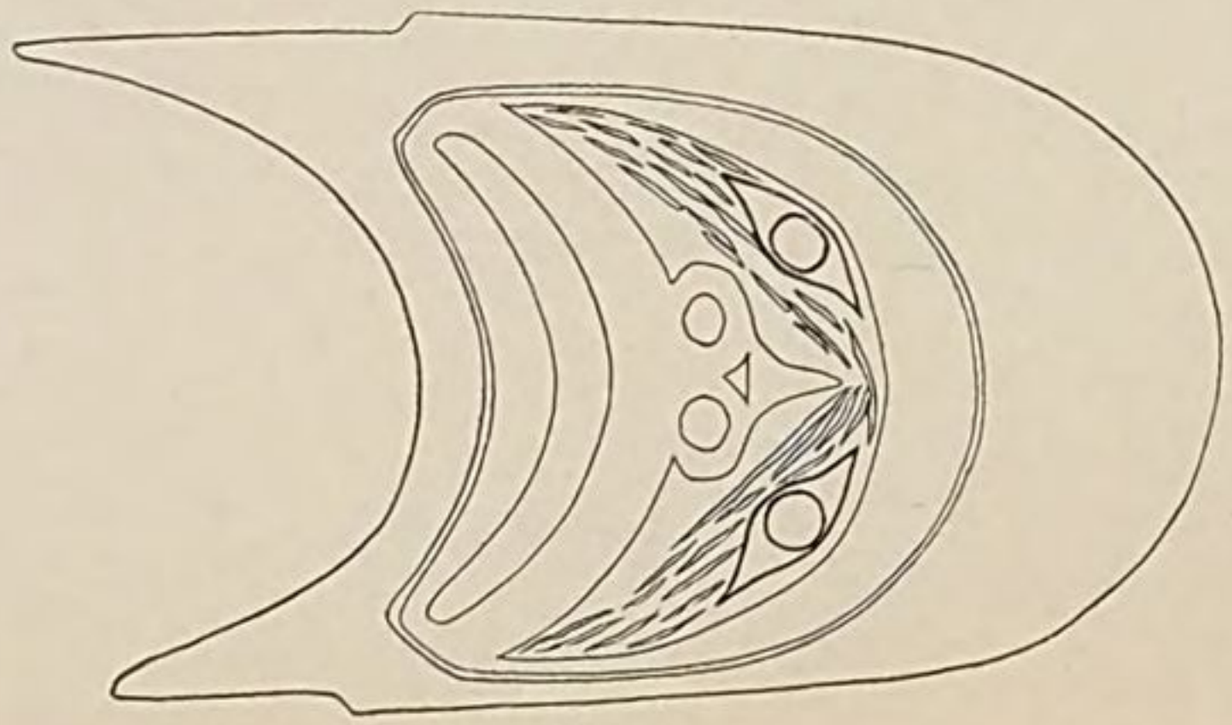


Fig. 4.

MASKS REPRESENTING BAXBAKUĀLANUXSĪ'WAĒ.

EXPLANATION OF PLATE 30.

1	3
2	4

MASKS REPRESENTING BAXBAKUĀLANUXSÎ'WAĒ.

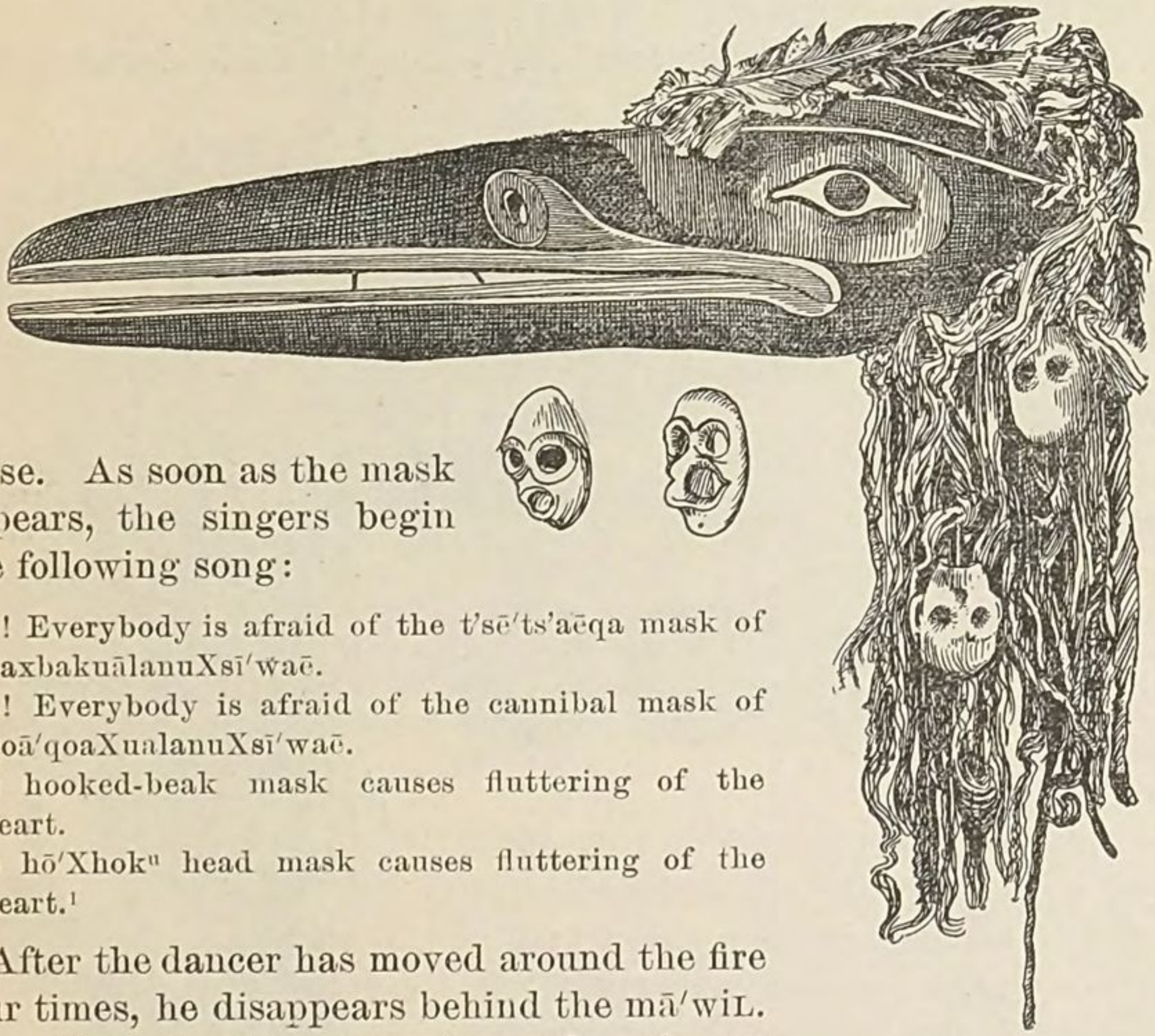
Fig. 1. Length, 17 inches; height, 15 inches; width, 18½ inches; black, red, and green.

Fig. 2. Painting on lower side of the mask represented in Fig. 1.
(Cat. No. $\frac{16}{1161}$, American Museum of Natural History, New York.)

Fig. 3. Length, 17½ inches; black and red.

Fig. 4. Painting on lower side of the mask represented in Fig. 3.
(Cat. No. $\frac{16}{1162}$, American Museum of Natural History, New York.)

out of his body. He now personates the slave of BaxbakuālanuXsī′-waē. Actually, it is not the same person who is wearing this mask, but somebody else who dances in his place. He crouches so that the long beak of the bird is close to the ground and turns his head with sudden jerks to the right and to the left. Both his hands are hidden under his blanket and with them he pulls strings which make the jaw of the mask open and shut very rapidly, thus producing a loud clappering noise. As soon as the mask appears, the singers begin the following song:



Wa! Everybody is afraid of the t'sē′ts'aēqa mask of BaxbakuālanuXsī′waē.
Wa! Everybody is afraid of the cannibal mask of Qoā′qoaXualanuXsī′waē.
His hooked-beak mask causes fluttering of the heart.
His hō′Xhokᵘ head mask causes fluttering of the heart.[1]

After the dancer has moved around the fire four times, he disappears behind the mā′wiL. Then the hā′mats'a comes forward again out of the mā′wiL and dances in a squatting position as before, but perfectly naked. He disappears, and next a dancer, the same one who wore the first mask, appears, coming out backward at the side of the mā′wiL. He wears the mask of BaxbakuālanuXsī′waē himself, and dances and moves in the same position as the Qoā′qoa-XualanuXsī′waē. (Fig. 77 and Plate 30.)

Fig. 76.

MASK OF QOĀ′QOAXUĀLANUX-SĪ′WAĒ, SET WITH FEATHERS AND RED CEDAR BARK.

Length, 43½ inches; black, green, red, white.

IV A, No. 892, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

It will be noticed that some of these masks are set with skulls carved of wood. These have various meanings. They may indicate that the mask was obtained in war, or that as many slaves were killed for the novice as there are skulls attached to the mask, or finally they may belong traditionally to the particular hā′mats'a. Throughout these ceremonies it must be borne in mind that the different hā′mats'as have

[1] See Appendix, page 686.

each a separate tradition, and, therefore, their masks and ornaments differ. While the dancer who wears the mask of BaxbakuālanuXsī′waē is dancing, the singers sing the following song:

He is carrying the hā′mats'a head mask which he obtained from BaxbakuālanuXsī′waē all around our world.[1]

After he has danced around the fire four times he disappears, and then the hā′mats'a comes again from out of the mā′wiL dressed in his ornaments of red cedar bark and dances in an erect position.

When an old hā′mats'a performs these dances, the masks do not appear, but he dances four times in succession, first in the squatting position, then the latter part of the second dance and his third and fourth dances erect.

Fig. 77.

MASK OF BAXBAKUĀLANUXSĪ′WAĒ, SET WITH RED CEDAR BARK.

Length, 27 inches; black, white, red.

IV A, No. 893, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

The Nā′q'oaqtôq use for the novice the two masks represented in fig. 78 and Plate 31. The legend of their hā′mats'a was told in the preceding chapter (p. 396). The mask which appears first is the raven mask; then the dancer performs his second dance, wearing the ornaments shown on figs. 79 and 80. His third dance is that of the hō′xhokᵘ (Plate 31). His cedar bark headdress for the first dance is shown in fig. 79, for the last dance in fig. 80. In both dances he wears the neck ring fig. 81.

The raven mask (fig. 82) belonged originally to a hā′mats'a of the Hē′iltsuq, from whom the Kwakiutl obtained it by marriage. When in use, a sleeveless waist of eagle skins which reaches down to the hips is attached to it. The arms of the dancer are tied with red cedar bark above the elbows and at the wrists. He wears an ordinary neck ring. He also wears bands around knees and ankles and a waistband, all made of red cedar bark similar to those worn by the dancer represented in Plate 31. The legend from which the mask derives its origin is as follows: A chief

[1] See Appendix, page 687.

RAVEN MASK AND DRESS OF RED AND WHITE CEDAR BARK, WORN BY THE HĀ'MATS'A OF THE NĀ'Q'OAQTÔQ.
Cat. No. 169105, U. S. N. M. Collected by F. Boas.

was deserted on an island by his slaves. He thought he would have to die of hunger. He sat down and covered his face with his blanket and cried. Then he heard his name being called. He looked up, but did not see anyone. He covered his head again. Soon his name was called a second time, but he could not discover anyone. The same happened a third time. Then he bit a hole in his cedar bark blanket and peeped through it. Soon he saw a mouse coming out of a hole and calling him. He threw off his blanket and spoke to the mouse, who invited him to enter. She warned him, however, to take care of the door. The chief followed her. She led him down the rock to Q'ō'moqoaē's house. The door of the house was the raven, Qoā'qoaXualanuXsī'waē, who snapped at everybody who entered the house. The chief jumped through the door when it opened. Q'ō'maqoaē gave him the hā'mats'a dance and the raven mask.

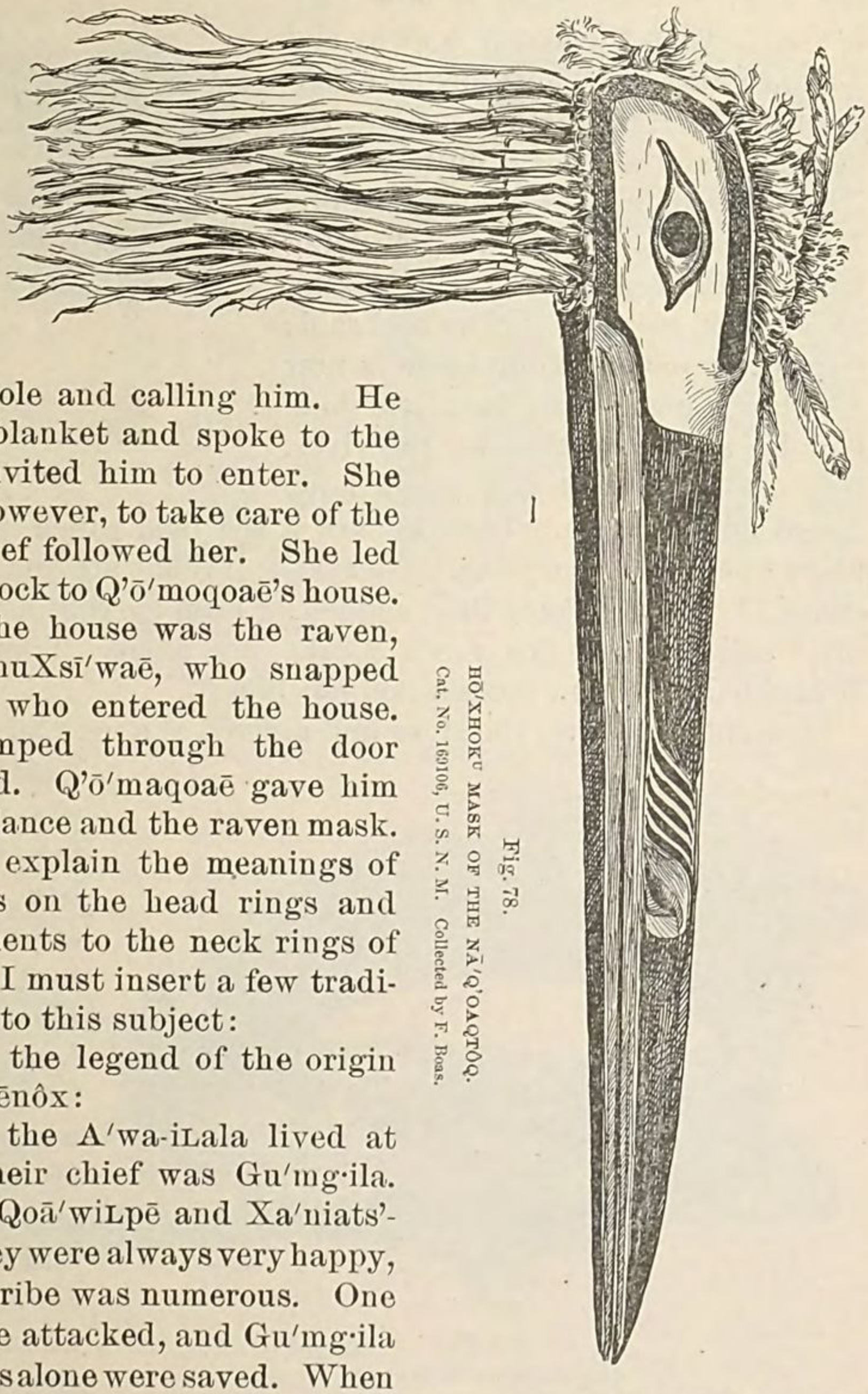


Fig. 78.

HQ'XHOKᵘ MASK OF THE NĀ'Q'OAQTÔQ.
Cat. No. 16910, U. S. N. M. Collected by F. Boas.

In order to explain the meanings of the crosspieces on the head rings and of the attachments to the neck rings of the hā'mats'a, I must insert a few traditions referring to this subject:

Following is the legend of the origin of the G·agg·aēnôx:

The first of the A'wa-iLala lived at Ts'ā'watē. Their chief was Gu'mg·ila. His sons were Qoā'wiLpē and Xa'niats'amg·ilakᵘ. They were always very happy, because their tribe was numerous. One night they were attacked, and Gu'mg·ila and his two sons alone were saved. When the day came Xa'niats'amg·ilakᵘ felt very ill at ease and told his father: "I will go into the woods. Do not try to see me, my dear!" His father replied: "Only take care, my son, lest something might happen to you. Do nothing that is wrong, because you intend to go and obtain a magic treasure. Rub your body for four days with hemlock branches, else you will smell like man." Then they separated. The young man

went into the woods at once and rubbed his body with hemlock branches for four days. He did not speak to anybody. Then he walked up the river Ts'ā'watē and came to a lake. A loon swam to the shore and asked him: "What are you doing here?" Xa'niats'amg·ilakᵘ replied: "I am looking for a magic treasure." "Take my name," said the loon. "Your name is now Ta'l-ts'aas." Then the loon flew away and Xa'niats'amg·ilakᵘ left the lake and went up the river. He arrived at the next lake and sat down on the shore. Now he saw a seal coming ashore. The seal said: "What are you doing here?" He replied: "I am looking for a magic treasure." The seal said: "Take my name. Your name is now Lā'lēlawēqamē." The seal left him, and he walked farther up the river. Now he arrived at the great lake. There he sat down. Then he saw a sea lion, which swam up to the place where he was sitting. He asked: "What are you doing here, my friend?" Xa'niats'amg·ilakᵘ replied: "I am looking for a magic treasure," and the sea lion said: "Take my name. Your name is now Mō'nakoala." Then the sea lion left him.

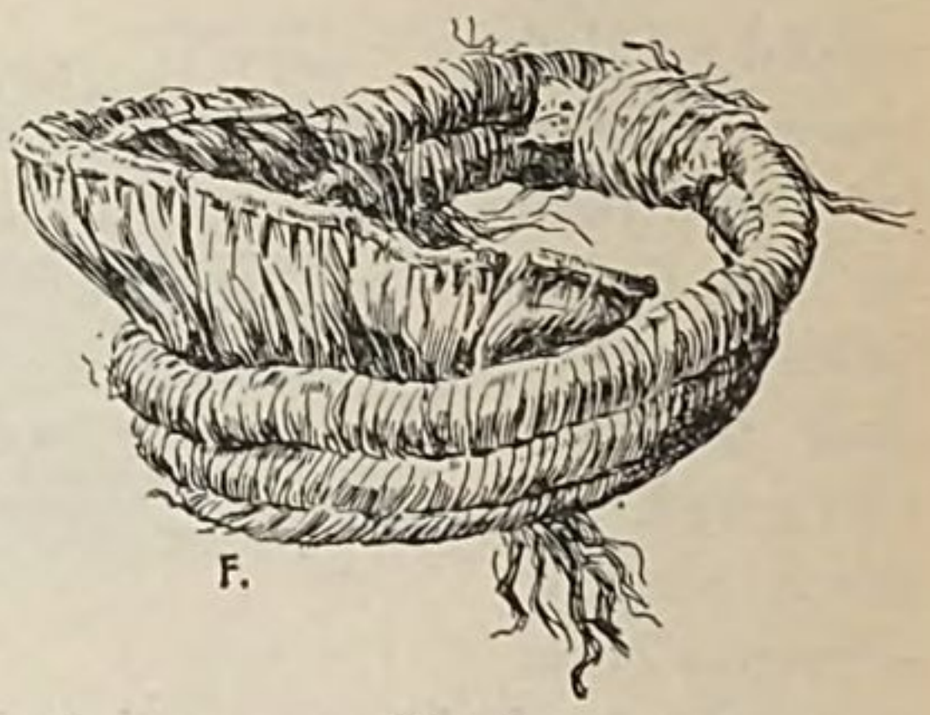


Fig. 79.

HEAD RING OF HĀ'MATS'A.

Cat. No. 169111, U. S. N. M. Collected by F. Boas.

He went farther up the river and arrived at a very large lake. There he sat down. Then he saw a whale emerging and coming up to him. The whale asked: "What are you doing here?" He replied: "I am looking for a magic treasure." Then the whale said: "Take my name. Your name is now Yā'qaʟnala and Qoayî'mts'ē and Gē'maxalas and a Lā'ʟayēgalîsē. Then the whale left him. Xa'niats'amg·ilakᵘ still felt badly and cried. There were no more lakes and he wanted to kill himself. For four days he stayed there and washed and rubbed his body with hemlock branches. Then he went to the top of the mountains. He came to the top of the great mountain Dā'duqola. He did not see anything there, and walked to the great mountain Nōla. He did not

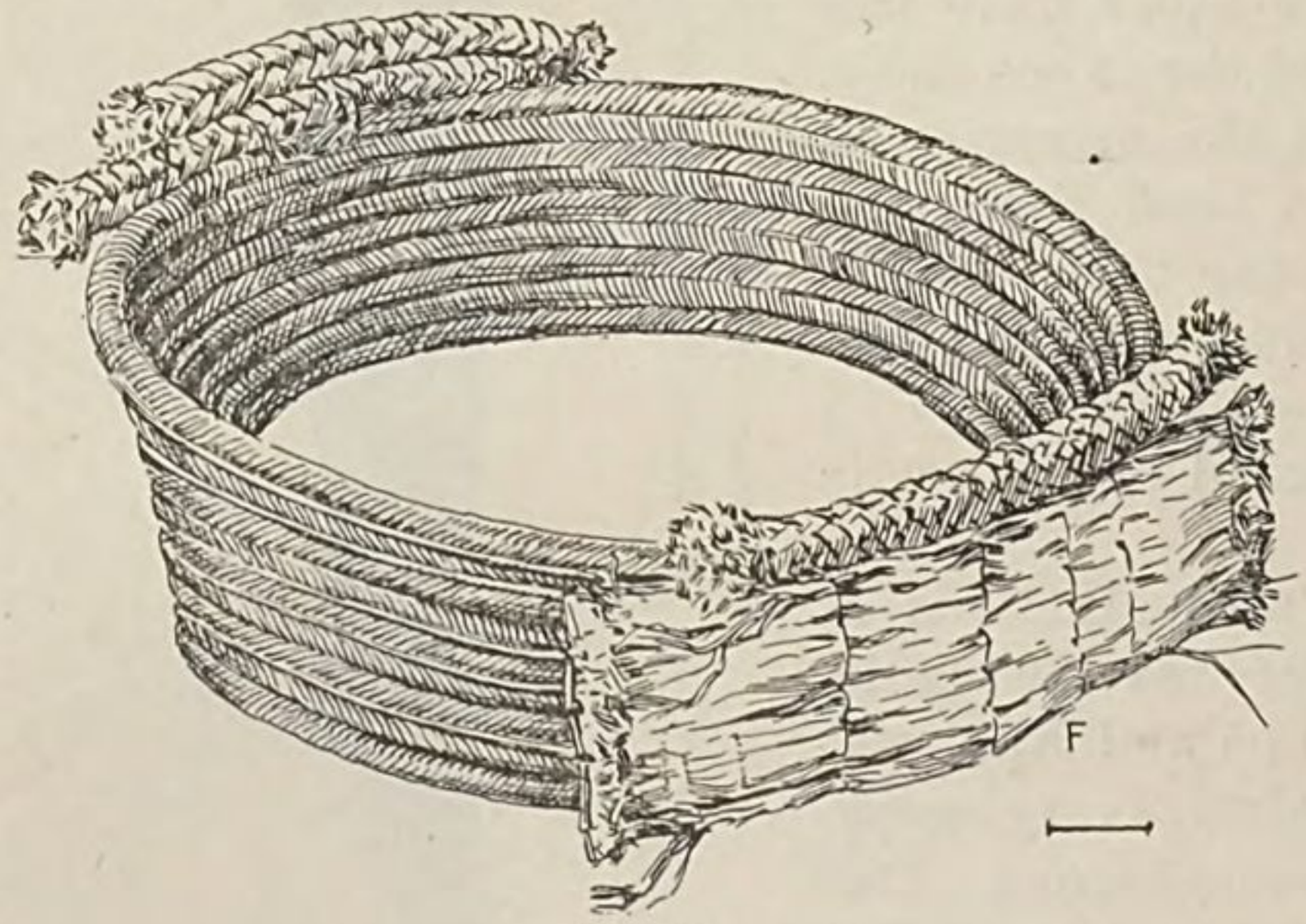


Fig. 80.

HEAD RING OF HĀ'MATS'A.

U. S. National Museum. Collected by F. Boas.

see anything there. Therefore he felt badly and was about to turn homeward. Then he discovered steam rising halfway down the mountain. He went to that place. It was evening when he arrived there. He saw a lake with steep precipices all around it, like to a washtub. He tried to find a way to go down to the lake. He slept during the night. In the morning he twisted cedar twigs. He made four long pieces so that the end reached down to the water. Now he saw a small island floating on the lake. He climbed down the cedar rope and came to the lake. Then the fishes in the lake covered his whole body and sucked at it. After he had bathed he climbed up the rope again. The fishes had sucked at his body so that it was all covered with blood. In the evening he climbed down again. The fishes tormented him in the same manner. Then he climbed up again and sat on the ground. The following morning he saw a cloud descending to the lake. When the cloud lifted, what should he see? There was a canoe on the lake with fifteen men in it. Fourteen were paddling and one was standing in the bow of the canoe. He carried a spear in his hand. They kept close to the island. Three times they went around it. Then Xa'niats'amg·ilak^{u} climbed down his rope. As soon as he reached

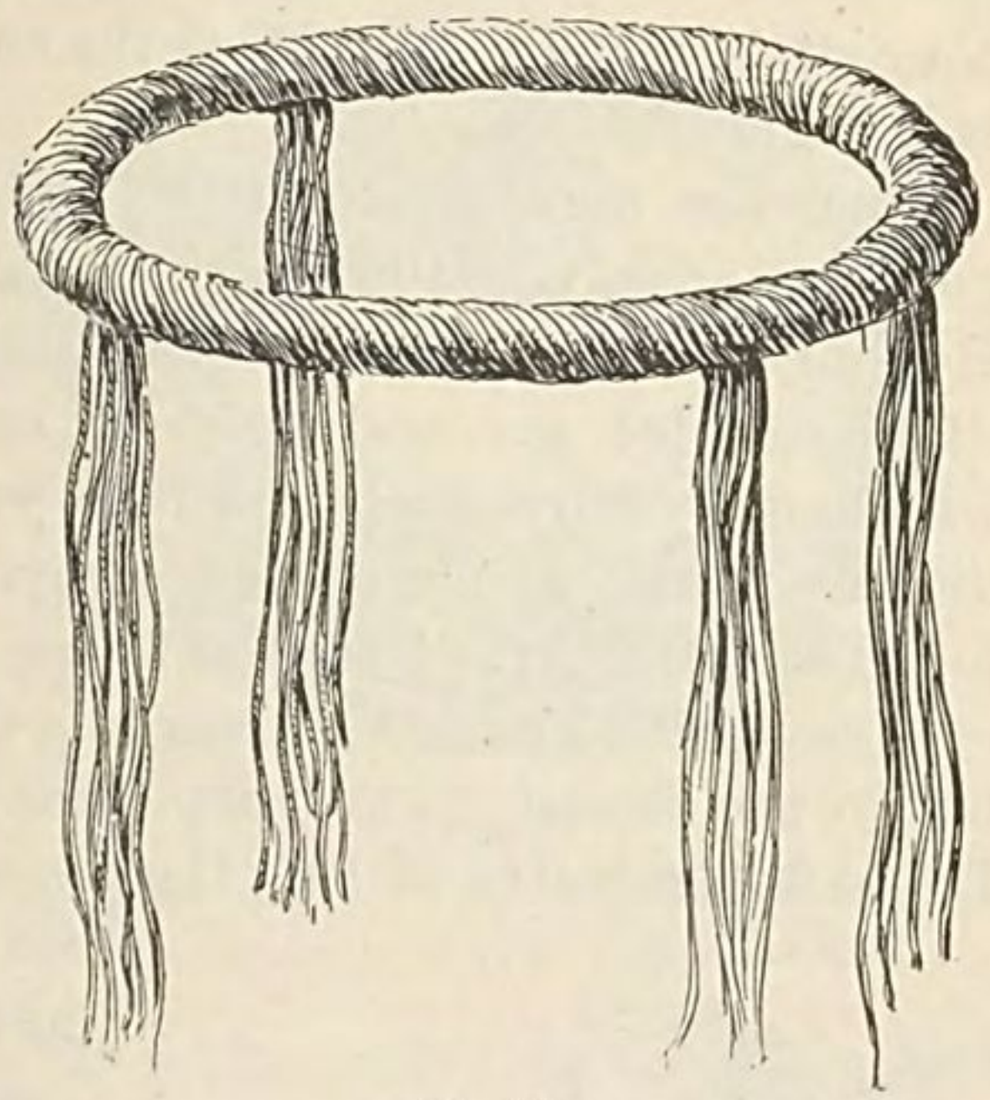


Fig. 81.

NECK RING OF HĀ'MATS'A.

Cat. No. 169112, U. S. N. M. Collected by F. Boas.

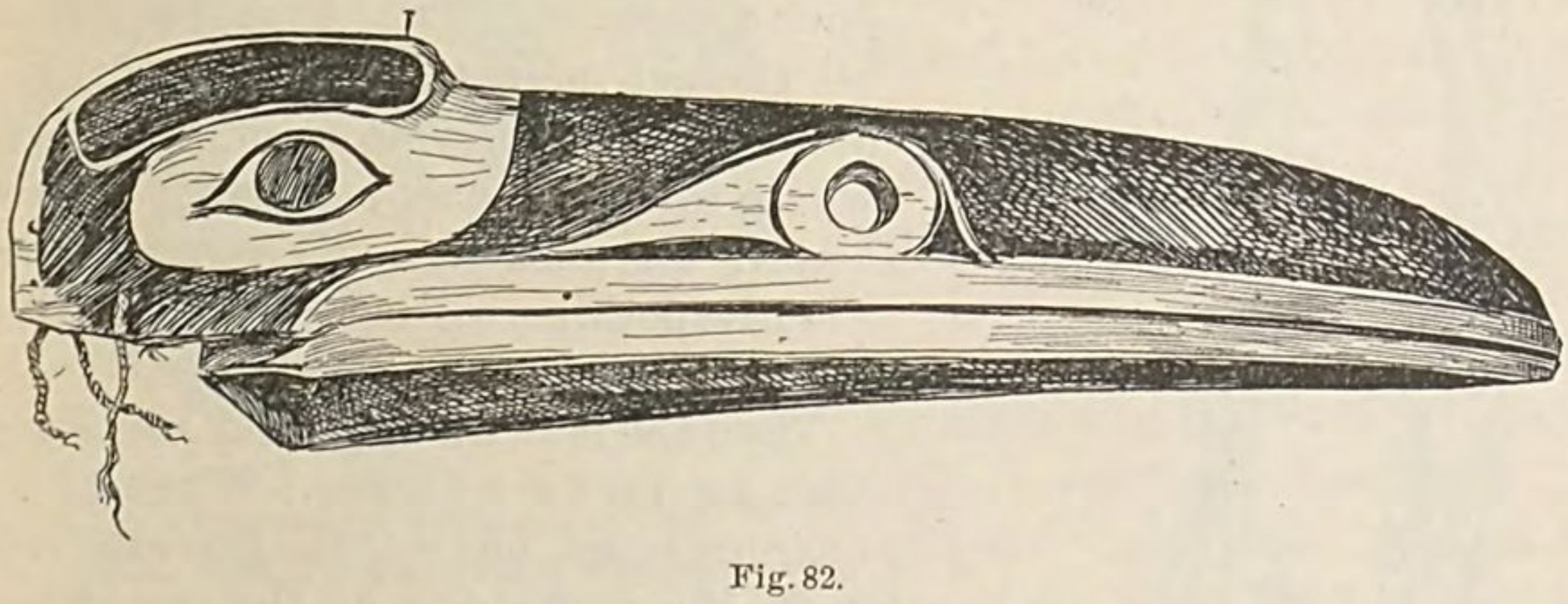


Fig. 82.

RAVEN MASK.

Cat. No. 169114, U. S. N. M. Collected by F. Boas.

the water he dived and swam to the island. When he was near it, he raised his head. After a short time the canoe came to the place where he was in hiding. He took hold of the canoe under its bow. Then the men became afraid and rushed to the stern of the canoe. The chief of the men said: "Look what stops our canoe!" One of the men saw

Xa′niats'amg·ilak^{u} holding the bow of the canoe. He told the other men, and their chief said: "O Lord, let go! I will give you the water of life." But Xa′niats'amg·ilak^{u} only lifted the bow of the canoe higher. Then the men spoke: "O Lord, I will give you the fire that burns everything." Xa′niats'amg·ilak^{u} only lifted the canoe still higher.

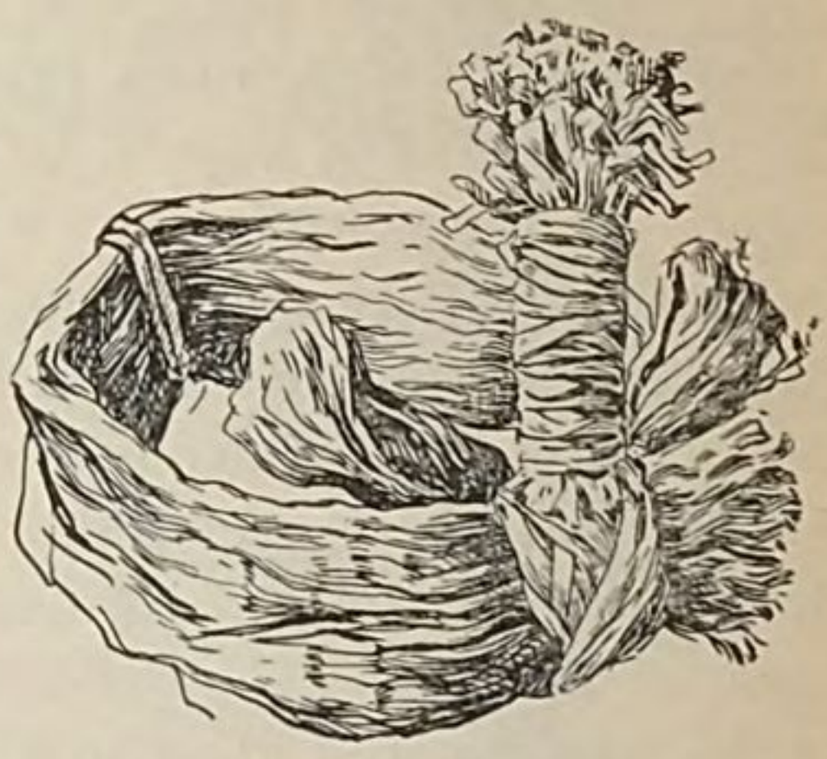


Fig. 83.

FIRST HEAD RING OF XA′NIATS'AMG·ILAK^{U}.

Cat. No. 175500, U. S. N. M. Collected by F. Boas.

Then the man spoke: "O Lord, let go, I will give you the death bringer." He only lifted the canoe still higher. "O Lord, let go, and this my canoe which moves by itself shall be yours and my winter dance names, A′myax·it and Ts'ēg·ēLilak^{u}. I am the harpooner of heaven." Then Xa′niats'amg·ilak^{u} let go the canoe. The harpooner and his crew went out of the canoe. He took the water of life, the death bringer, and the fire, and put them into the canoe. Then he took the canoe and squeezed it in his hands, so that it became small, and he put his cedar bark ornaments on the head of Xa′niats'amg·ilak^{u}. Then the harpooner told him what to do. He said: "Take care! Sprinkle the water of life on him whom you want to resuscitate. If you show your fire whatever you point at will be burnt, however far it may be; and when you go to war, take the death bringer, and all your enemies will die. And you will kill all the sea monsters and all kinds of animals. When you want to go anywhere in your canoe, just put it into the water, go aboard, and say, 'paddle.' Then its paddles will move by themselves. Its name is 'Paddle side canoe.'"

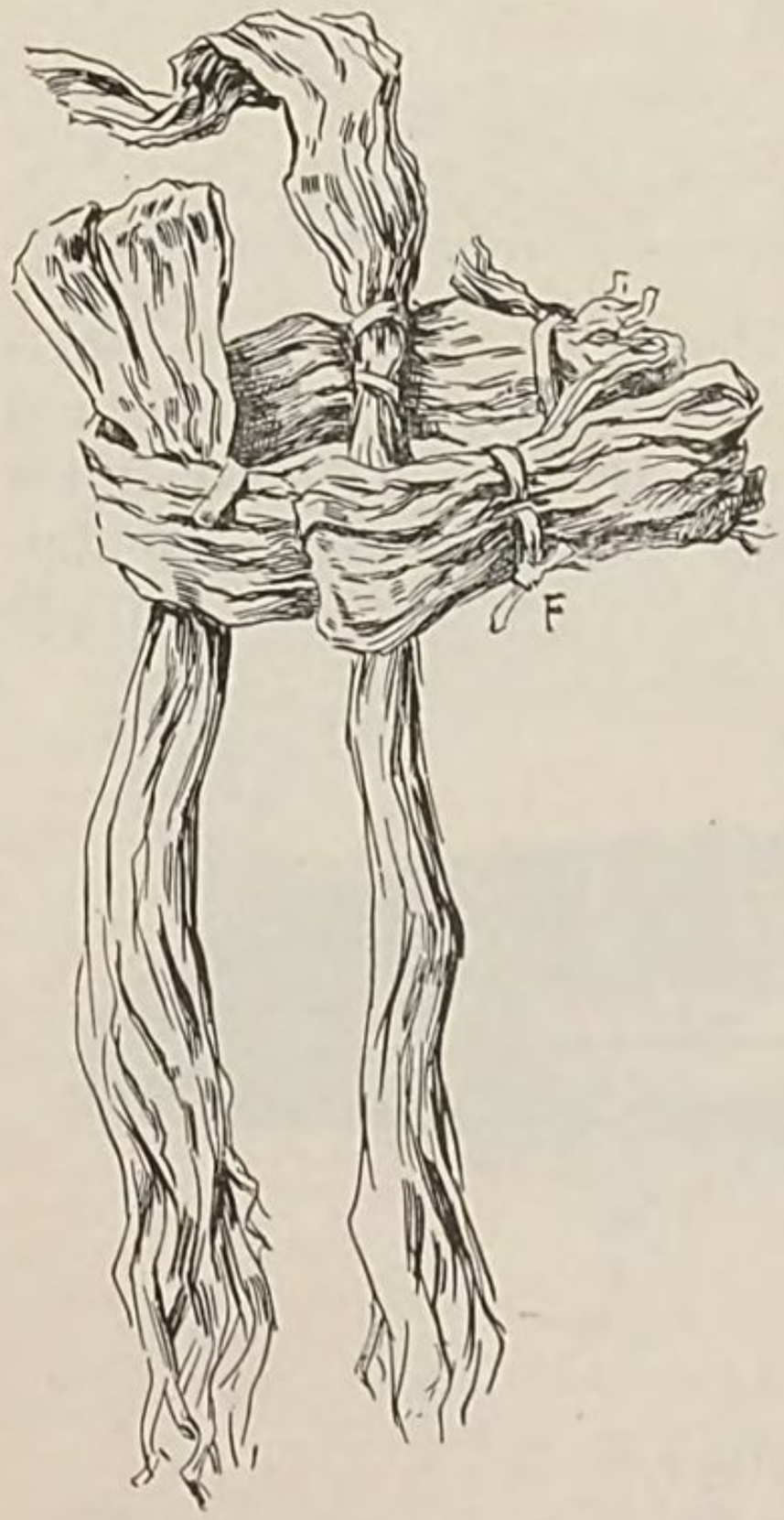


Fig. 84.

SECOND HEAD RING OF XA′NIATS'AMG·ILAK^{U}.

Cat. No. 175498, U. S. N. M. Collected by F. Boas.

Then the man disappeared and Xa′niats'amg·ilak^{u} went home. When he was near his home, he took the fire and tried it on the mountains on the one side of the house of Gu′mg·ila. They burnt right away. Then he was glad. Now Gu′mg·ila saw the mountain burning and spoke to his other son: "O dear! your brother has done well," for he thought that it was he who made the mountain burn. Not long after Xa′niats'amg·ilak^{u} entered his father's house. They gave him to eat and he told everything to his father, about his red cedar bark and about

the names. After he had told his father, he said: "Now let us make war upon all the people of the world. Take a good canoe. We want to find them who killed all our friends."

His father said: "Yes, my son; I think you have obtained magic power. Let us go to-morrow. Only take care of the sea monsters." Then Gu'mg·ila cleaned a good canoe and put the mats and paddles into it in the evening. The next morning he launched the canoe. Then Xa'niats'amg·ilak^{u} made himself ready and went aboard. He called his brother Qoā'wiLpē, and he went aboard also. Gu'mg·ila stayed ashore. Then Xa'niats'amg·ilak^{u} said to his brother: "I do not like our canoe, and I will change it." Then he took his small stick out of his head ring and put it into the water. At once it became a canoe with five paddles on each side. He jumped into it and called his brother. He also jumped aboard. Then Xa'niats'amg·ilak^{u} took off his cedar bark ring and took out the wood carving in shape of a beaver. He said to his canoe "y i i i," and he pointed the fire bringer to the upper end of the village and it caught fire; then to the lower end of the village, and it also caught fire. Now he told his canoe: "Paddle!" and it paddled. Then Gu'mg·ila was glad to see that his son was a magician. They were going to Gā'yux, and there they met the monster sea otter. He struck it with the death bringer, and it was transformed into a stone. He arrived at Gā'yux. Then he saw the village and went ashore. He was invited and the people fed the two brothers. After they had eaten, Xa'niats'amg·ilak^{u} asked his host: "Who are you, brother?" He replied: "I am NEnā'lag·ila, and this is my wife, Yō'lagilayūkoa." Then Xa'niats'amg·ilak^{u} said: "Thank you, my brother. I am Xa'niats'amg·ilak^{u}, the son of Gu'mg·ila. This is my elder brother, Qō'awiLpē." Then NEnā'lag·ila asked: "Where are you going?" He replied: "We will go up this river." "Don't do that, master, else you will have bad luck, because there are monster herrings there." Xa'niats'amg·ilak^{u} replied: "Don't you know the monster at TsaXuala where canoes cross the inlet? I vanquished it." Then he called his elder

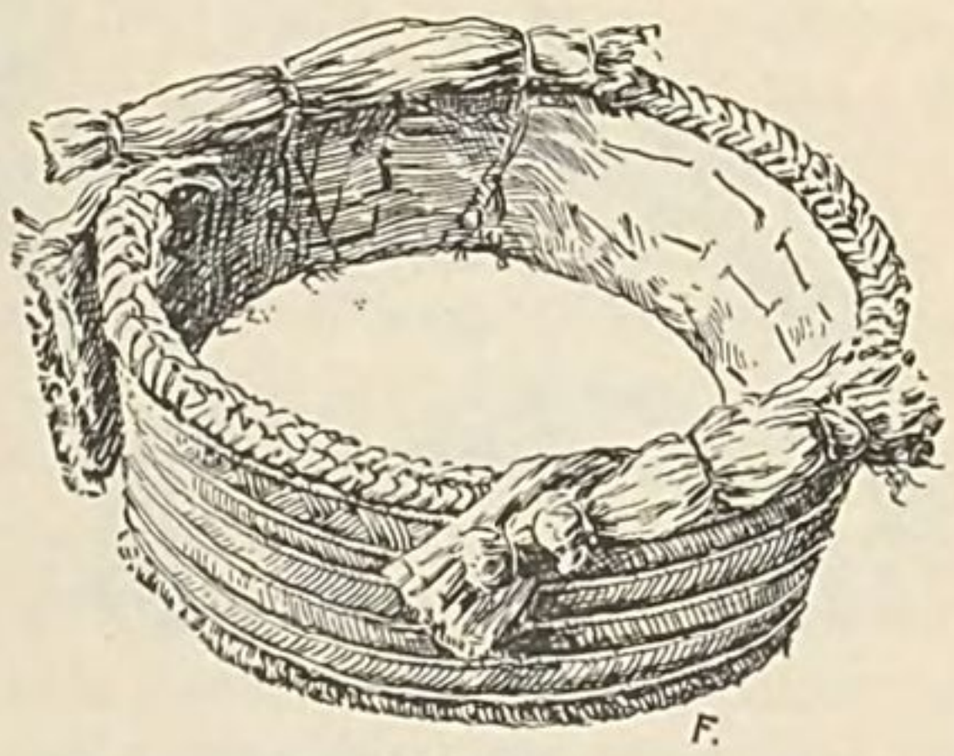


Fig. 85.

THIRD HEAD RING OF XA'NIATS'AMG·ILAK^{U}.

Cat. No. 175504, U. S. N. M. Collected by F. Boas.

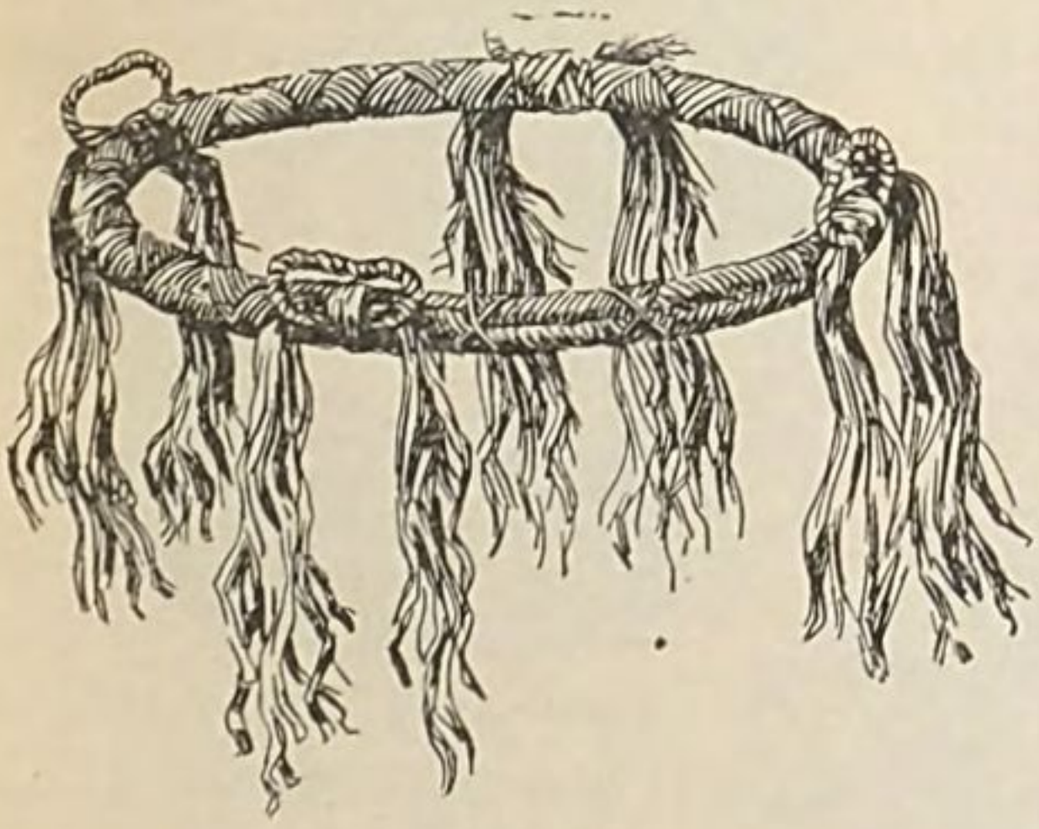


Fig. 86.

FIRST NECK RING OF XA'NIATS'AMG·ILAK^{U}.

Cat. No. 175506, U. S. N. M. Collected by F. Boas.

brother and said: "Now I will change your name." He took his brother's hands and rubbed the death bringer over them. They were turned into stone, and he spoke: "Now your name shall be T'ētēsumx·stsana." NEnā'lag·ila said: "O, master! you are not a common man. Now I see what kind of a man you are. You will make war upon the monster herrings of whom we are afraid; but be careful." The canoe paddled, and he arrived at that lake. When they were in the middle of the lake, the monster herrings came. He struck his fire at them, but it did not kill them. They jumped into the canoe and it foundered. Then Xa'niats'amg·ilakᵘ and his brother were dead. That is the end.

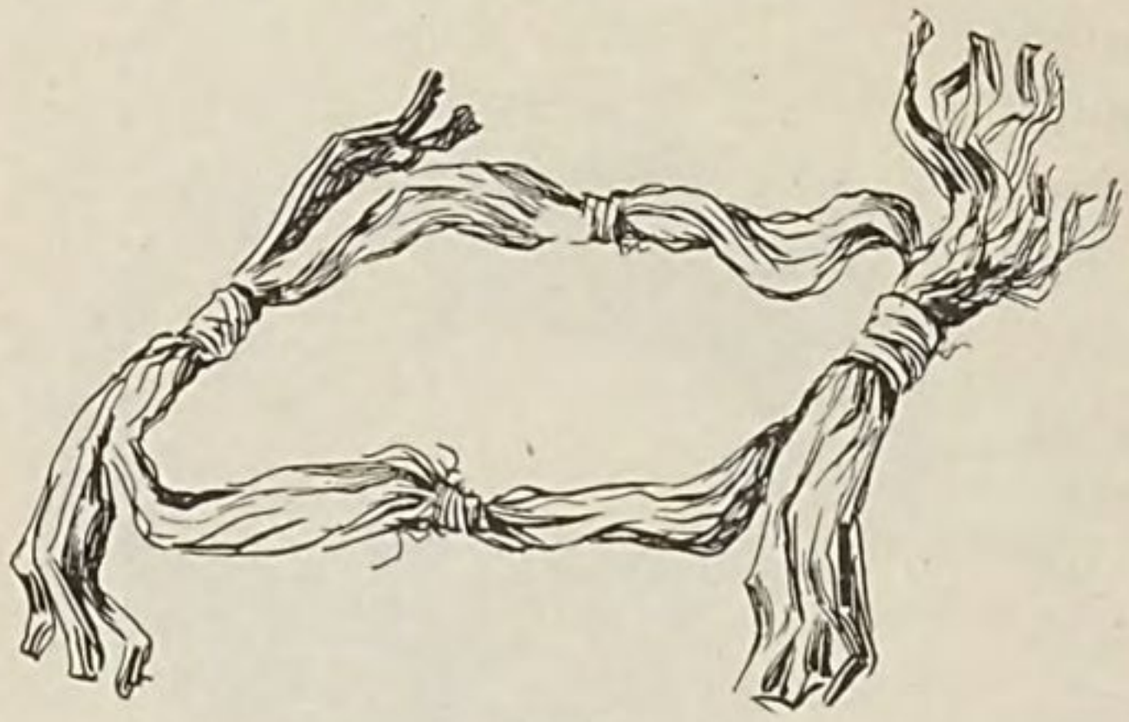


Fig. 87.

SECOND NECK RING OF XA'NIATS'AMG·ILAKᵘ.

Cat. No. 175499, U. S. N. M. Collected by F. Boas.

Figures 83 to 91 represent the cedar bark ornaments of Xa'niats'amg·ilakᵘ. In fig. 83 is shown the head ring which he wears in his first dance. The upright piece in front represents the magic canoe which he obtained in the lake, as related on page 452. The upright pieces at both sides of his second head ring (fig. 84) represent the fire bringer.[1] The crosspiece on the forehead of his third head ring (fig. 85) represents the death bringer. Figure 86 shows his first neck ring, which has four rings attached to it. By these the attendants hold him when he is dancing the hā'mats'a dance. The front crosspiece of his second neck ring (fig. 87) designates that he has the powers of a shaman, the other one that he was made a hā'mats'a by encountering the spirits. Figures 88 and 89 are the rings which the dancer who personifies Xa'niats'amg·ilakᵘ wears in feasts during the winter-dance season. There are still two other rings worn by the dancer which refer to a portion of the legend not contained in the preceding version. The crosspiece on the head ring (fig. 90) represents the death bringer which he obtained in the lake, while the crosspieces and the front of the neck ring (fig. 91) represent the sī'siuL which he obtained from Ts'ā'eqamē.

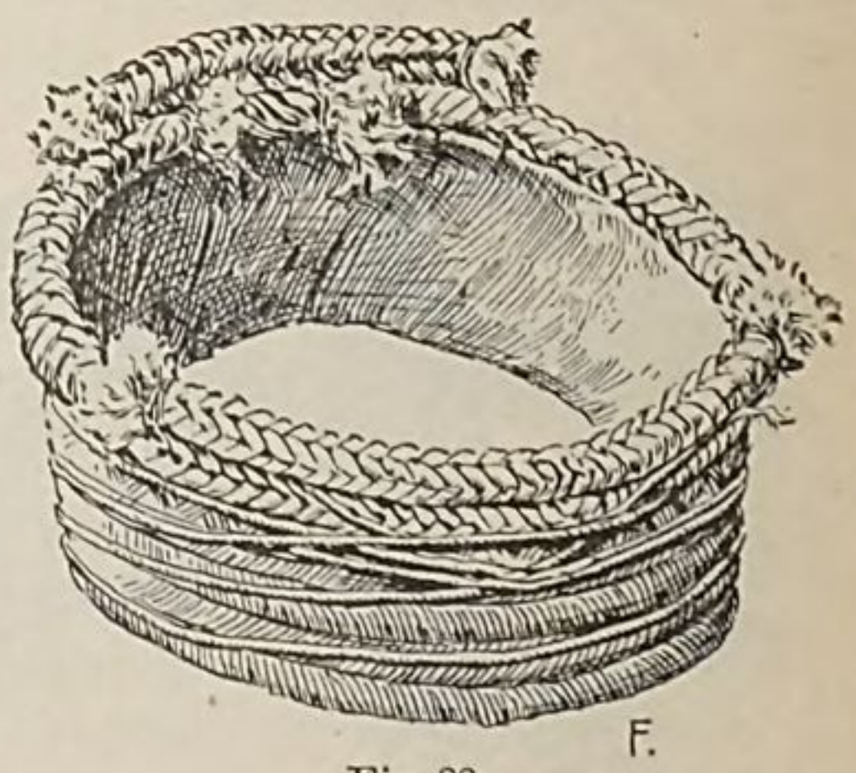


Fig. 88.

HEAD RING WORN BY XA'NIATS'AMG·ILAKᵘ IN FEASTS.

Cat. No. 175507, U. S. N. M. Collected by F. Boas.

Figures 92 to 95 are the ornaments of Lexx·ā'lix·ilagū. According

[1] Owing to an oversight the one lateral horn has been pulled out. The loose end should have been pushed down into the ring.

to tradition, Nōmasᴇ'nxelîs, an ancestor of the Naqô'mg·ilisala had a son named Lᴇxx·ā'lix·ilagū (p. 335), who obtained his dances from the sī'siuL and from the wolves. His first head ring (fig. 92) shows six crosspieces in front. These are the death bringers, and the upright piece on top is the fire bringer, while the square behind represents the bucket containing the water of life. In his second head ring (fig. 93) only four death bringers are shown. This ring is worn in his second dance. As will be described below, the Naqô'mg·ilisala and La'Lasiqoala take off some of the symbols which designate the supernatural powers of the dancer after each dance. The ring shown in fig. 94 is stripped of all these crosspieces and is worn by the dancer in feasts. The dancing neck ring (fig. 95) has two crosspieces on the sides. These symbolize the gifts of the sī'siuL, while the gifts of the wolves are symbolized by the attachments in front and in the back.

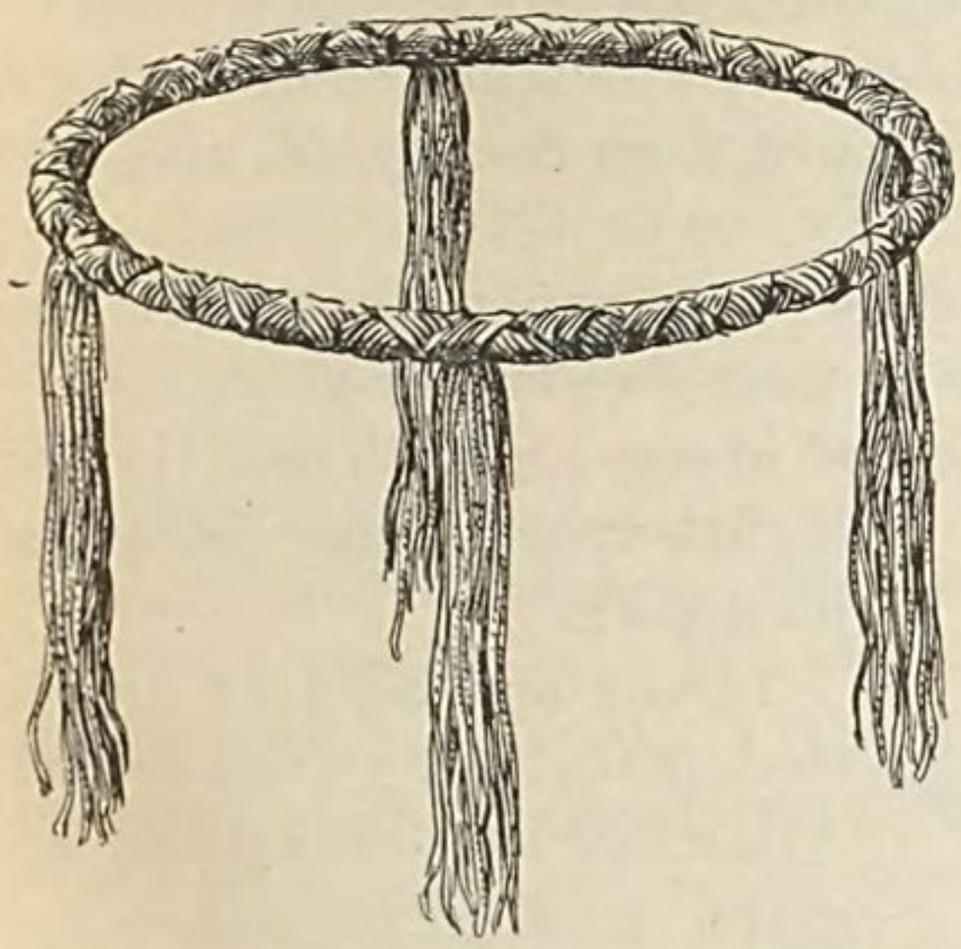


Fig. 89.

NECK RING WORN BY XA'NIATS'AMG·ILAKᵁ IN FEASTS.

Cat. No. 175508, U. S. N. M. Collected by F. Boas.

Another hā'mats'a of the La'Lasiqoala, on returning from the woods, dances four nights with wreaths of hemlock branches; the following four nights (the fifth to the eighth) without any ornaments; then four nights (the ninth to the twelfth) with ornaments of red cedar bark. He wears eight bundles over his forehead, which are called k·'ā'siwē, and four on each side. The next night, after he has finished dancing, one of the k·'ā'siwē is taken off, which is publicly announced the following morning. The fourteenth night two more of these bundles are taken away; the next, two more; and finally, the sixteenth, one more, which is also publicly announced each morning. The seventeenth night a black line is drawn over his face from the left side of his forehead to the right side of his chin, and then he rises to bite people. Later on he is excited by mistakes and by songs of the ghost dancer. The head ring is meant to symbolize the moon, and the decrease in the

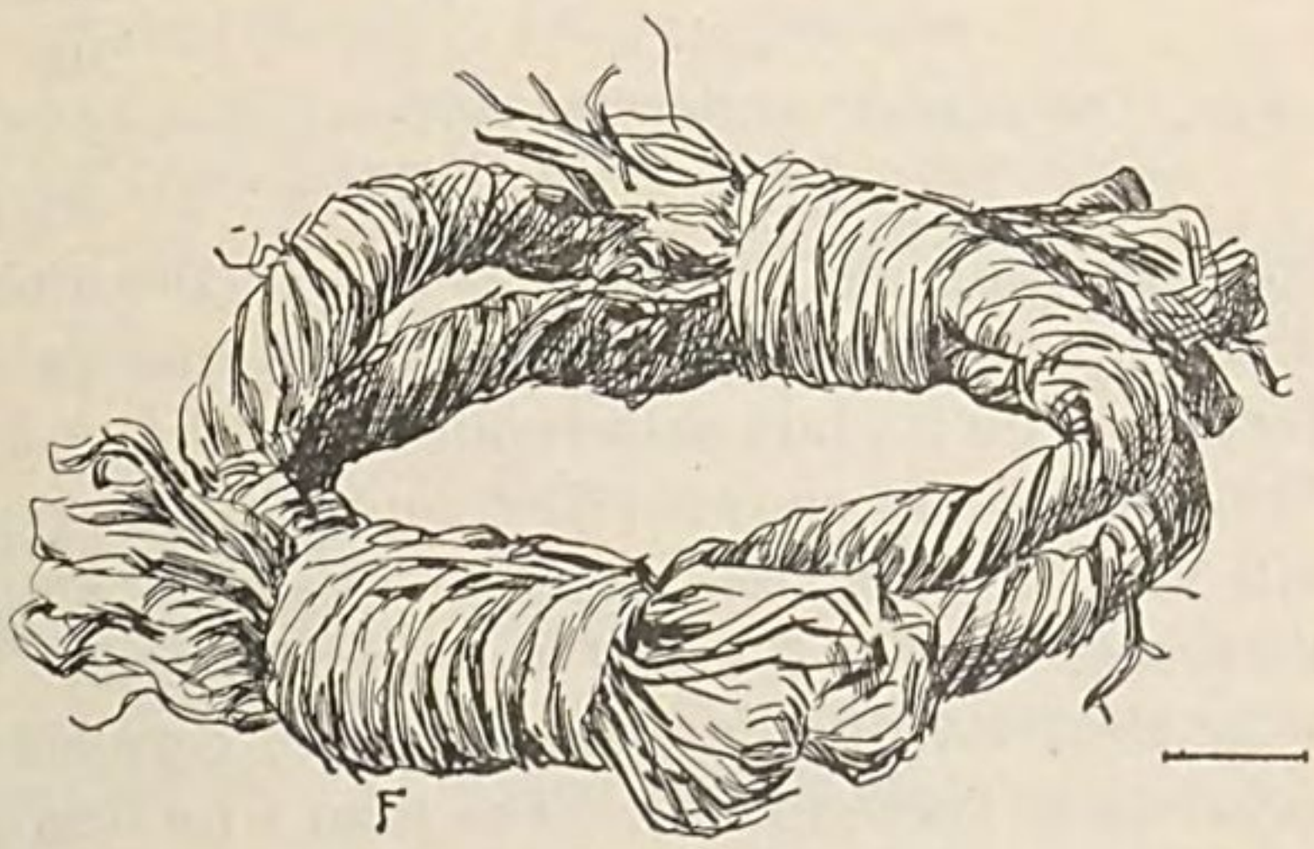


Fig. 90.

HEAD RING OF XA'NIATS'AMG·ILAKᵁ.

Cat. No. 175492, U. S. N. M. Collected by F. Boas.

size of the ring is said to signify the waning of the moon. When the hā′mats'a returns, a bloody line runs over his face, beginning on the cheeks, curving up toward the nose, which it crosses in its upper portion. It is said to designate the moon. The line is made by rubbing the face with dogfish skin. It is said that this line indicates the effect of Wina′lag·ilîs's canoe, which rubbed against the face of the novice.

Each hā′mats'a has eight songs of his own, which are composed for him by the nâ′qatē at the time of his return from the woods, and are sung whenever he dances.

A young man who first becomes a member of a secret society can not join the hā′mats'a until after a number of years. For seven years he must have been a member of societies of lower rank. Then in the eighth year he may become a hā′mats'a.

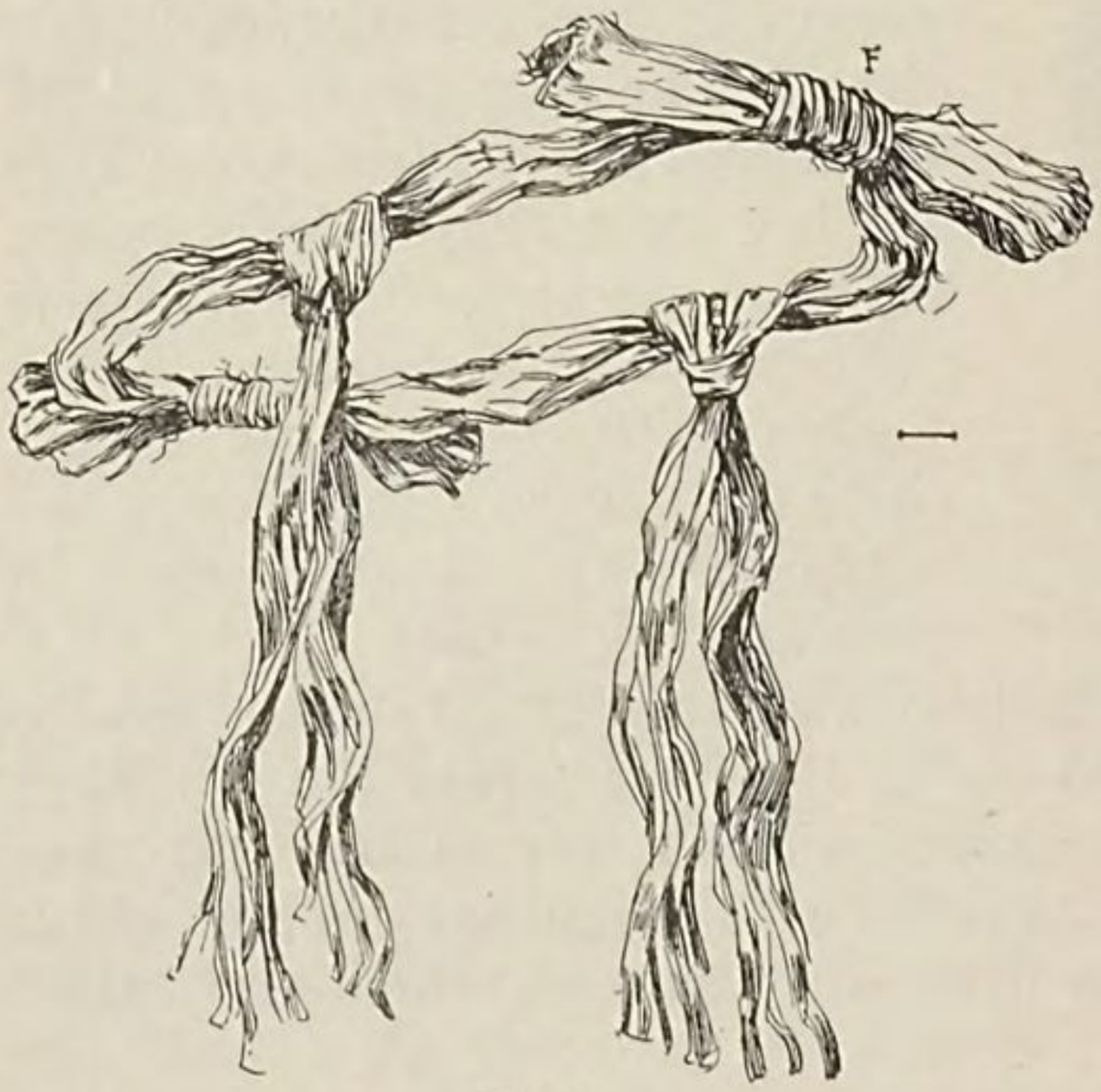


Fig. 91.

NECK RING OF XA′NIATS'AMG·ILAK^{U}.

Cat. No. 175493, U. S. N. M. Collected by F. Boas.

The hā′matsa's first initiation is called g·ī′yak·ila. After four seasons he may be given another hā′mats'a by his father. This is called tâ. After he has been initiated four times (yduXp'Ena tâ= three times gone into it), he may leave the ranks of the hā′mats'a and become a quē′qutsa. This is called "locking the whistles into the box." This is accomplished in the following way: When the master of ceremonies assembles all the people (qap'ē′k^{u}, see p. 502), all the hā′mats'as stand up; then the one who desires to join the quē′qutsa says:[1] "I will not stand up before you. I want to be quē′qutsa." He is asked why he desires to do so, but only replies:[2] "I have finished being hā′mats'a." Then the people reply:[3] "Let your whistles be quiet," and he says:[4] "I will keep my whistles quiet." The same statements must be made by other members of the seal society who desire to become quē′qutsa.

On the following day the master of ceremonies sends his messengers to invite to the qap'ē′k^{u}. The man who desires to become a quē′qutsa

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[1] K·'ē′sLEn Lā′x'uiL. Quē′quatsāLLEn.
Not I stand in house. I shall be quē′qutsa.

[2] La'mEn qoā′L hā′mats'a.
I have finished hā′mats'a.

[3] Âlag·a ama awī′laLEx qas k·'ē′s'aōs q'oā′tsēowiL.
Really strong (real) not you cry inside.

[4] Qä′LaLEn k·'ēLEn q'oā′tsēowiL.
I will not I cry inside (whistles).

must join them. He is painted with the particular design which used to excite him—a head, maggots, the raven, the x·ā′wayū, or the corpse. When painting them, the people hold them tight and torment them. The skull is painted in black on the hā′mats'a's face; the maggots are represented by numerous little dots, and the x·ā′wayū is indicated by a rope. The painting representing the corpse are feet, because when the hā′mats'a enters the house carrying a corpse, its feet are always visible under the blanket.

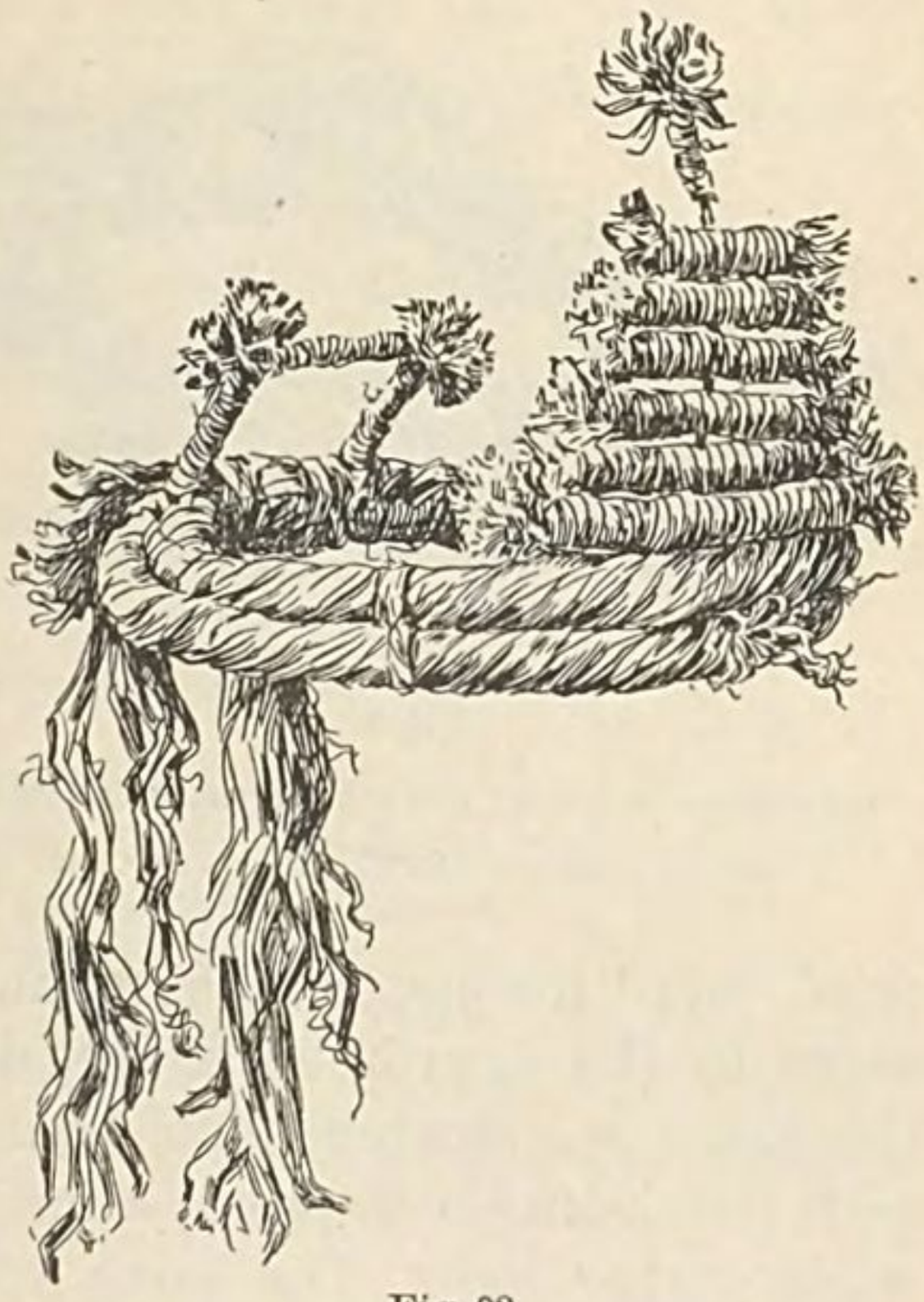

Fig. 92.

FIRST HEAD RING OF LEXX·Ā′LIX·ILAGŪ.

Cat. No. 175518, U. S. N. M. Collected by F. Boas.

Painted in this manner he accompanies the messengers, who carry long staffs (quē′sp'ēq). The hā′mats'a pretends that he can not do the work assigned to the messengers properly. When they call a name, they always strike the threshold with their staffs. The hā′mats'a stands in their midst and they strike his feet with their staffs when calling a name. In short, he is maltreated in all conceivable ways, particularly by his rival. If he can not endure the torments longer, he will rush to the seat of the seal society. The people pull him back, push him, and tear his clothes. Then he gets excited and bites the people.

Following are a number of songs of the hā′mats'a:

HĀ′MATS'A SONG COMPOSED RECENTLY BY QOAYŌ′STĒTSAS.[1]

1. I am going all around the world eating everywhere with BaxbakuālanuXsī′waē.
2. I give you no time to escape from me when I go with BaxbakuālanuXsī′waē.
3. I am at the center of the world; for me BaxbakuālanuXsī′waē is crying hāp.
4. I am at the post of the world; for me BaxbakuālanuXsī′waē is crying hāp.

Fig. 93.

SECOND HEAD RING OF LEXX·Ā′LIX·ILAGŪ.

Cat. No. 175519, U. S. N. M. Collected by F. Boas.

When the hā′mats'a moves his trembling arms from right to left, he indicates by gestures the contents of the song. In the preceding song the gestures are as follows: With the words "I am going," the arms are stretched out to one side; "all around the world," the arms swing around in a wide circle; "I," the shoulders are alternately brought

[1] Appendix, page 688.

forward and backward—this means that the dancer himself is being referred to; "eating everywhere," the right hand stretches far out, as though it was taking food, and is then brought to the mouth, while the left describes a wide circle, indicating everywhere; "Baxbakuālanu Xsī'waē," both hands are bent inward and the finger tips moved toward the mouth, meaning the eater.

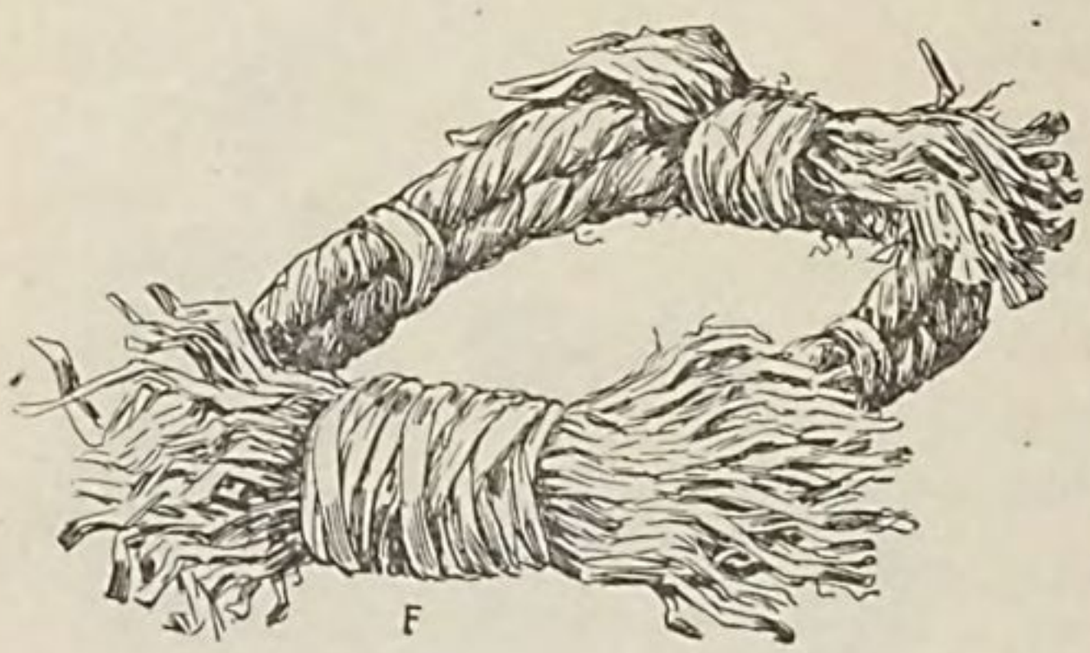

Fig. 94.

HEAD RING WORN BY LEXX·Ā'LIX·ILAGŪ IN FEASTS.

Cat. No. 175520, U. S. N. M. Collected by F. Boas.

I did not see the dance of the second line. In order to explain the gestures of the third line, I must give a literal translation:

"I went, you cried 'hāp' for me, BaxbakuālanuXsī'waē, at the center of the world." "I went," gesture as above, "you cried 'hāp' for me, BaxbakuālanuXsī'waē," both hands bent inward move to the mouth, as above, designating the cannibal spirit; then the arms are stretched far backward, the palms turned downward, and the head is lowered, this being the cannibal spirit's attitude when crying hāp. The same attitude is taken by the dancer wearing the mask (fig. 77) when he clatters with its movable jaw, at the same time crying hāp. "At the center of the world." When these words are sung, the dancer is in front of the fire and looks up to the rear of the house in BaxbakuālanuXsī'waē's attitude, as before, because then he is looking at the center of the world. The last line is the same as the third.

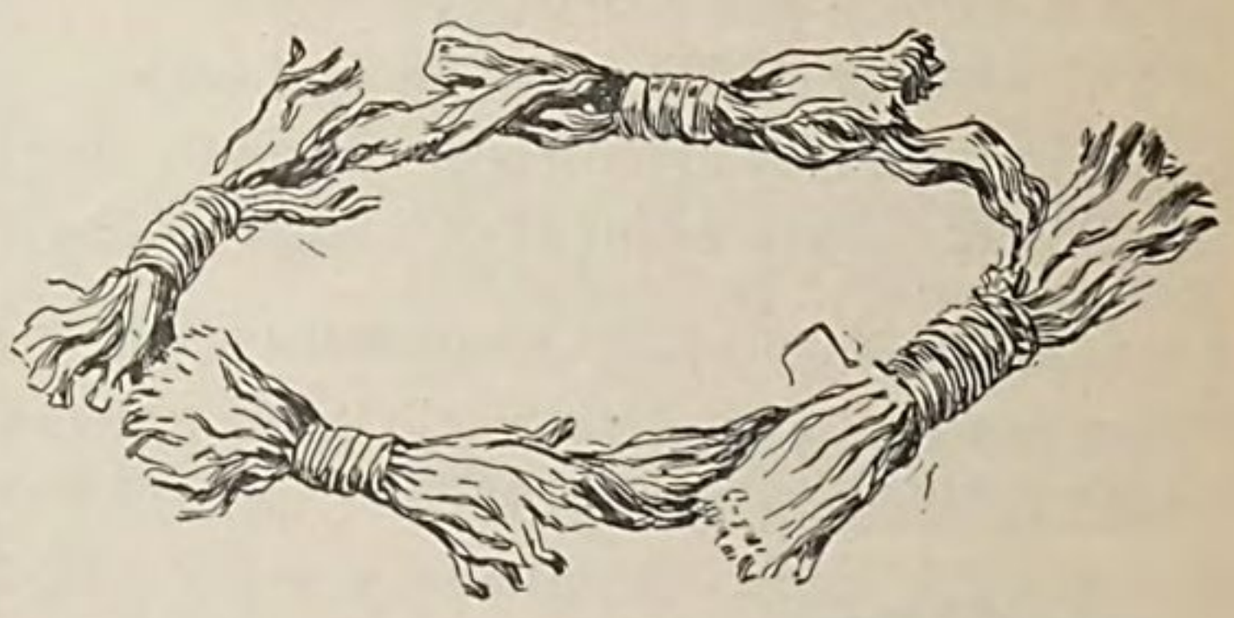

Fig. 95.

NECK RING OF LEXX·Ā'LIX·ILAGŪ.

Cat. No. 175521, U. S. N. M. Collected by F. Boas.

HĀ'MATS'A SONG COMPOSED RECENTLY BY HĒ'ILTSAQULS.[1]

Ham ham ā'mai, ham ham ā'mai, hamai, hamaima mā'mai, hamai hamamai. Ham hamām ham am ham amāmai hamēi hamā'mai.

1. Ham ham ā'mai. Utter the hā'mats'a cry, utter the hā'mats'a cry, the cry of the great spirit who dwells at the north end of the world.
2. Ham ham ā'mai. Utter BaxbakuālanuXsī'waē's cry, BaxbakuālanuXsī'waē's cry, the cry of the great spirit who dwells at the north end of the world.
3. Ham ham ā'mai. Utter the hō'Xhok^{u} cry, the hō'Xhok^{u} cry, the cry of the great spirit who dwells at the north end of the world.
4. Ham ham ā'mai. Utter the raven cry, the raven cry, the cry of the great spirit who dwells at the north end of the world.

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[1] Appendix, page 689.

The mention of the north refers to the fact that the composer is a descendant of the Tongass by his mother's side. He claims to have obtained his hā'mats'a from her tribe.

HĀ'MATS'A SONG COMPOSED ABOUT FIFTY YEARS AGO.[1]

1. Food will be given to me, food will be given to me, because I obtained this magic treasure.
2. I am swallowing food alive; I eat living men.
3. I swallow wealth; I swallow the wealth that my father is giving away.

The presents given away at the time of the initiation of the hā'mats'a and at his later dances are said to be swallowed by him. The song means, therefore, that through his ecstasy his father was compelled to give away much wealth.

HĀ'MATS'A SONG OF THE LAU'ITSÎS.[1]

1. I went all around the world to find food.
2. I went all around the world to find human flesh.
3. I went all around the world to find human heads.
4. I went all around the world to find corpses.

HĀ'MATS'A SONG OF THE KOSKIMO.[1]

1. You will be known all over the world; you will be known all over the world, as far as the edge of the world, you great one who safely returned from the spirits.
2. You will be known all over the world; you will be known all over the world, as far as the edge of the world. You went to BaxbakuālanuXsī'waē, and there you ate first dried human flesh.
3. You were led to his cannibal pole in the place of honor of his house, and his house is our world.
4. You were led to his cannibal pole, which is the milky way of our world.
5. You were led to his cannibal pole at the right-hand side of our world.

This song was sung for a youth who had taken the place of another one who had died. Therefore the song says that he safely returned from the spirits. The text says: "You returned from Ia'lag·ilîs," which is another name for the spirit of the winter dance. The milky way is the cannibal pole of BaxbakuālanuXsī'waē; in other cases (see p. 405) it is the rainbow.

SECRET SONG OF THE HĀ'MATS'A WHO CARRIES A CORPSE.—AWĪ'K·'ENÔX.[2]

Now I am going to eat.
My face is ghastly pale.
I shall eat what is given to me by BaxbakuālanuXsī'waē.

HĀ'MATS'A SONG OF WA'NUK COMPOSED ABOUT EIGHTY YEARS AGO.[3]

That is the way of the real BaxbakuālanuXsī'waē.
Are you the real BaxbakuālanuXsī'waē?

This refers to Wā'nuk's war expedition. He had cut off the head of his enemy, and, holding it with his teeth, he said: That is the way

[1] Appendix, page 690.
[2] Appendix, page 691.
[3] Appendix, page 692.

of BaxbakuālanuXsī′waē! And turning to his dead enemy he mocked him, who had also been a hā′mats'a, saying: "Do you think you were the real BaxbakuālanuXsī′waē?" thus implying that he was more powerful.

FEAST SONG USED IN A FEAST GIVEN IN HONOR OF THE HĀ′MATS'A.[1]

1. I came to your dancing house to eat my fill.
2. The heat of the whirling flames scares me, frightens me to enter your dancing house, where everybody warms himself. Wa ha hai, waiya wai.

FEAST SONG USED IN A FEAST GIVEN IN HONOR OF THE HĀ′MATS'A.[1]

1. I came to your dancing house to eat my fill.
2. It does not matter if your fire hurts me, and if I vomit all kinds of food that you set before us in your dancing house—you to whom everybody goes to get food.

HĀ′MATS'A SONG, LA′LASIQOALA.[1]

1. The hō′Xhok^{u}'s voice is heard all over the world. Assemble at your places, dancers! at the edge of the world.
2. The raven's voice is heard all over the world. Assemble at your places, men! at the edge of the world.
3. The hā′mats'a's voice is heard all over the world. Assemble at your places, men! at the edge of the world.

HĀ′MATS'A SONG, LA′LASIQOALA.[2]

1. Truly! He goes around the whole world, the great hā′mats'a, looking for food everywhere, the great hā′mats'a, on both sides of the world.
2. Truly! He wants to eat plenty, the great hā′mats'a. He is trying to eat all himself, the great hā′mats'a, but he did not reach the food that he was going to obtain at the edge of the world.
3. He wants to eat with both hands, the great hā′mats'a, at the house of the one who is trying to eat all himself all over the world; but he did not reach the coppers that he was going to obtain at the edge of the world.

This translation is not quite certain. The song refers to the Goasi′la who in olden times had many dances and did not want to give them to the other Kwakiutl tribes, who desired to obtain them through marriage. The La′Lasiqoala heard that the Goasi′la intended to invite them to their winter dance. They were invited and started to go, but their chief was afraid, it seems, and returned back without attending the feast.

K'Î′NQALALALA SONG BELONGING TO THE HĀ′MATS'A SONG (p. 459, No. 1).[2]

1. I hold down your furor, great hā′mats'a.
2. I hold down your whistles, great hā′mats'a.
3. I appease your voracity, great hā′mats'a.
4. You are looking for food all the time, great hā′mats'a.
5. You are looking for heads all the time, great hā′mats'a.
6. You devour wealth, great hā′mats'a.

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[1] Appendix, page 692.

[2] Appendix, page 693.

K·Î′NQALALALA SONG.[1]

1. Begin! You whose eagle down which is strewn all over her body, fills the house, who brings all the people together from all over the world.
2. Begin! You who make the people weak, tempting with food those who ate too much, whose body makes the people of the whole world oversatiated.
3. Begin! You who pile the red-hot stones up to the roof of the house all over the world.

The girl who danced this k·î′nqalaLala was a prostitute in her tribe. She is scourged in this song. The composer meant by the eagle down and the piles of red stones the young men who came in crowds to her house. The meaning of the second verse becomes also clear from this point of view.

K·Î′NQALALALA SONG.[2]

1. BaxbakuālanuXsī′waē cries hāp for me; he utters the hā′mats'a cry for me. I have the great supernatural power.
2. BaxbakuālanuXsī′waē and his companion have thrown the sound of whistles, the sound of the magic power into me. I have the great supernatural power.
3. I reached the place where the exciting cry of BaxbakuālanuXsī′waē and his companion is heard. I have the great magical power.

K·Î′NQALALALA SONG.[3]

1. The sounds of the winter dance are heard wherever you are, great one.
2. Hā′mats'a cries are heard wherever you are, great one.
3. You went right up to the raven, and the sound of fighting ravens is heard wherever you are.
4. You went right up to the shutting mouth, and the sound of the hō′Xhokᵘ is heard wherever you are.
5. You went right up to him who carries one corpse on each arm for you.

The hā′mats'a cry "hāp" was obtained by the Kwakiutl through intermarriage with the Awī′k·'ēnôx. The dancer was by descent partly Awī′k·'ēnôx. Therefore the song says that he carried the hā′mats'a cry through the world. (Line 4, shutting mouth=the hō′Xhokᵘ.)

K·Î′NQALALALA SONG.[4]

1. I have the winter dance song, I have magic powers.
2. I have the hā′mats'a song, I have magic powers.
3. I have BaxbakuālanuXsī′waē's song, I have magic powers.
4. Your magic power killed the people, and therefore they all hide before you, fearing your great power.

This song belonged to a man who had killed a chief of the Qoē′xsōt'ēnôx, and the song refers to this fact. Later on he was killed by a Qoē′xsōt'ēnôx, who now owns the song.

K·Î′NQALALALA SONG OF THE NIMKISH.[4]

1. I tame the wildness of BaxbakuālanuXsī′waē when I see it.
2. I cut the veins of the wild monster in the north when I see it.

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[1] Appendix, page 693.

[2] Appendix, page 694.

[3] Second song of the same dancer who owns the preceding song. See Appendix, page 694.

[4] Appendix, page 695.

The k·î′nqalaLala to whom belonged this song, used the rattles shown in figs. 96, 97. Each rattle represents a raven with a skull on its back; a fish is shown on its stomach. The skull indicates that the hā′mats'a is filled with the desire of eating skulls. The form of the rattle is evidently suggested by the beautiful northern raven rattles. (See pp. 623, 629.)

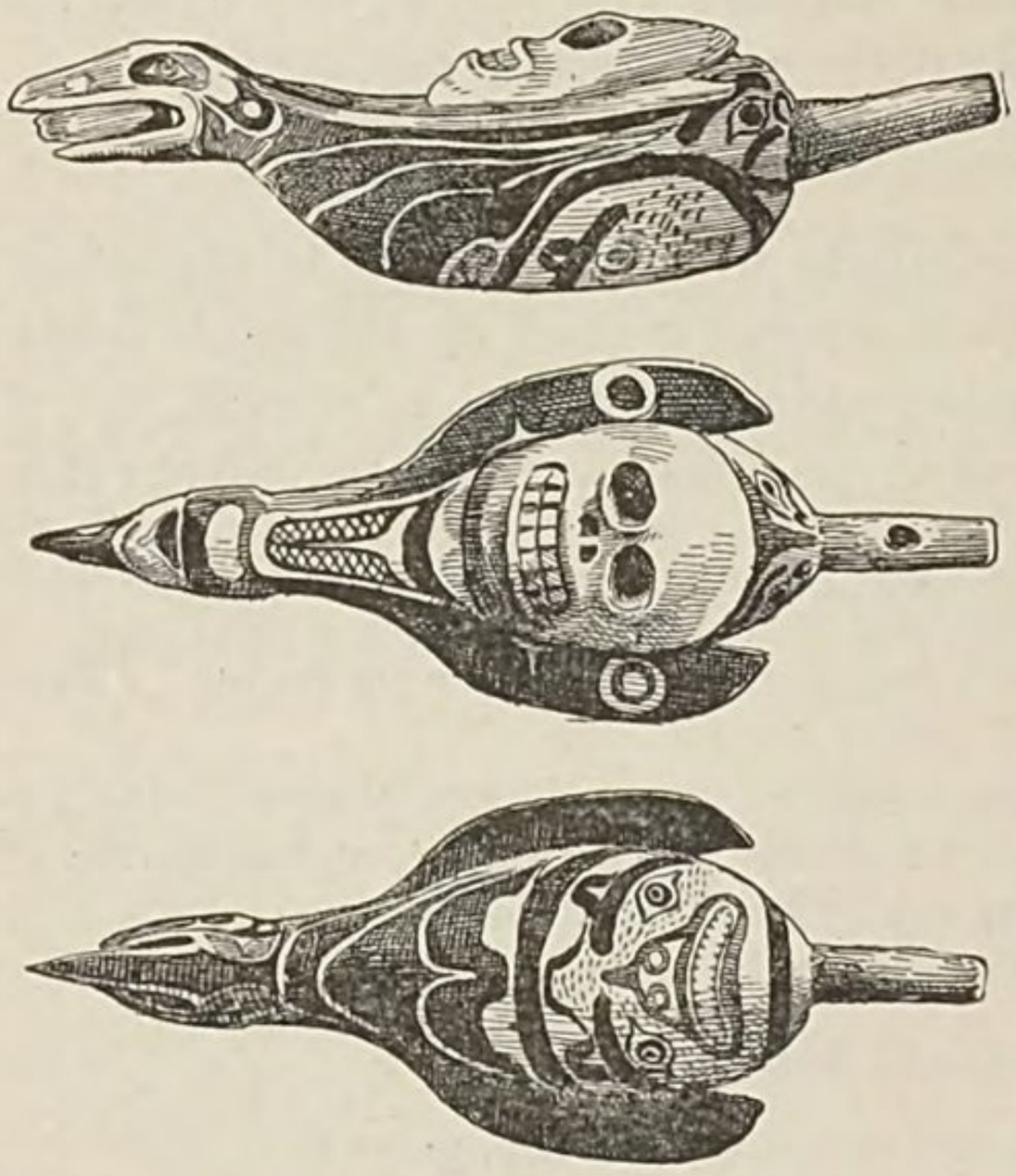


Fig. 96.

RATTLE OF K·Î′NQALALALA.

Length, 17½ inches; black, blue, red.

IV A, No. 6935, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

This song was also made for a girl of ill repute who had spread the syphilitic contagion among her tribes. To this refers the remark: "I cut the veins of the wild monster." The singers mean that she is infecting everybody, even the wild monster.

Q'Ō′MINŌQA.

The q'ō′minōqa dance was obtained recently, through intermarriage, from the La′Lasiqoala. The novice also disappears in the woods to be initiated by BaxbakuālanuXsī′waē. When she is brought back by the tribe, her hair is falling out, and her head is covered with blood, because it is torn by BaxbakuālanuXsī′waē. She is carrying a skull in each hand. As soon as she is seen, the hā′mats'as begin to cry hāp and dance squatting with trembling hands up to her, full of desire to devour the heads which she is carrying. The other q'ō′minōqas and those who have formerly been q'ō′minōqa join her dance and move as though they were carrying heads. Thus she dances into the house, always surrounded by the hā′mats'as, who finally take the skulls out of her hands and lick them and eat the maggots and the dry skin that is still attached to them. When returning, the q'ō′minōqa is dressed in hemlock in the same way as the hā′mats'a. Loose hair is placed on her head and alder juice is streaming down her hair, giving the appearance as though she was bleeding profusely and as though her hair was falling out, being torn off by BaxbakuālanuX-

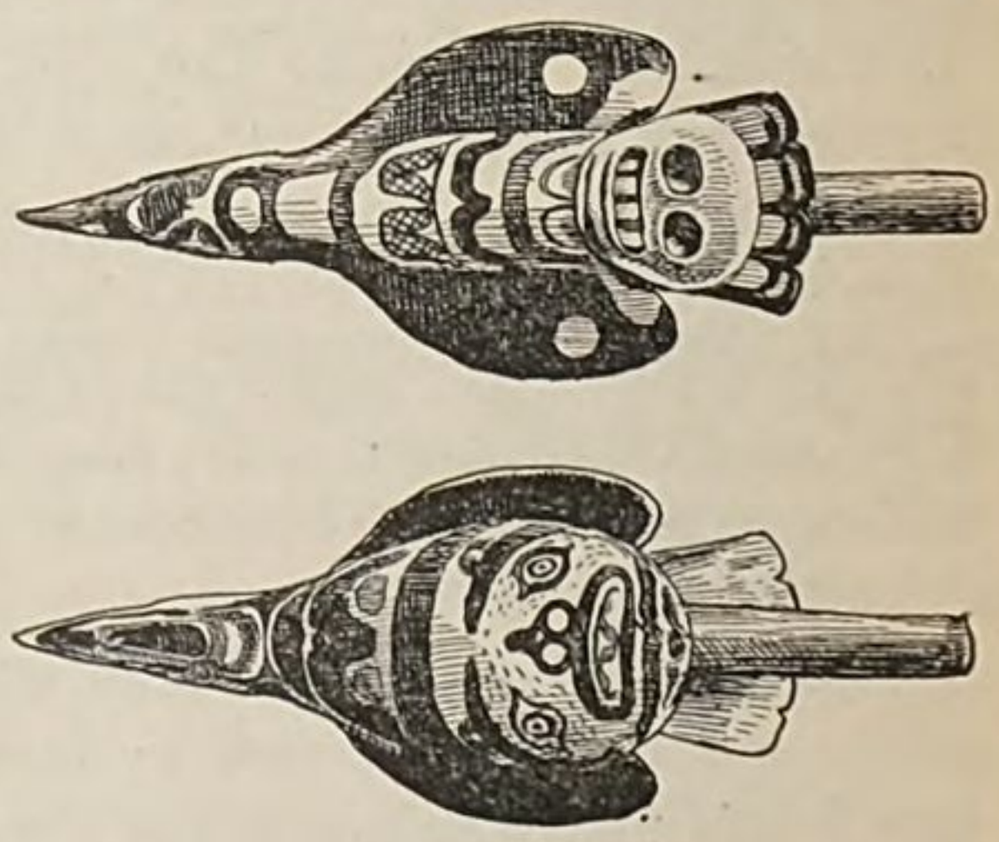


Fig. 97.

RATTLE OF K·Î′NQALALALA.

Length, 16½ inches; blue, black, red.

IV A, No. 426, Royal Ethnographical Museum, Berlin. Collected by A. Jácobsen.

sī′waē. In the dances performed in the night of her return and later on she wears head ring, neck ring, anklets, and bracelets of red and white cedar bark mixed.

Q'Ō′MINŌQA SONG.[1]

1. Q'ō′minōqa went with me all around the world.
2. Q'ō′minōqa walked with me all around the world.
3. Q'ō′minōqa's left side is foreboding evil.
4. Q'ō′minōqa's right side is foreboding good.

By the La′Lasiqoala the q'ō′minōqa dance is sometimes called yiai′-atalaL. Among them she has the ornament shown in fig. 98. One of her songs is as follows:[2]

1. Truly, the people join your dance.
2. Because you are carrying a rattle in your hand while you dance, they join in your praise.
3. On account of all that you are carrying in your hand, they join in your praise.

THE HA′MSHAMTSES.

The Kwakiutl state that before obtaining the hā′mats'a from the Hē′iltsuq they had only the ha′mshamtsEs, who is also initiated by BaxbakuālanuXsī′waē. Nowadays he is considered as inferior to the hā′mats'a, and the dance belongs almost exclusively to women. The ceremonial following the ha′mshamtsEs's return from his or her initiation is the same as that of the return of the hā′mats'a. The ornaments are also of the same description, except that his cedar bark is not twisted and plaited, but simply wound around his head, neck, wrists, and ankles. He does not use a mā′wiL. His cry is not hāp, but wîp. He does not dance in a squatting position, but always standing, his forearms stretched forward, the elbows close to his sides. His hands are trembling. After his first dance, which, as all others, consists of four rounds, he reappears wearing a mask. This is either a head mask, similar to the QoāqoaXualanuXsī′waē mask described on page 447 or it is a full face mask. Almost all of these represent animals, the protectors of the dancer. It has not become clear to me why it is that so many different animals may become the protectors of the ha′mshamtsEs.

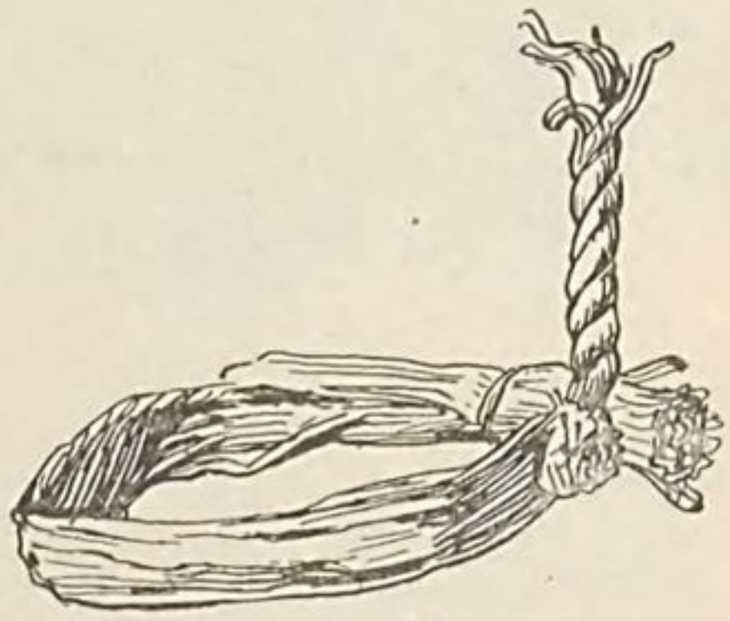


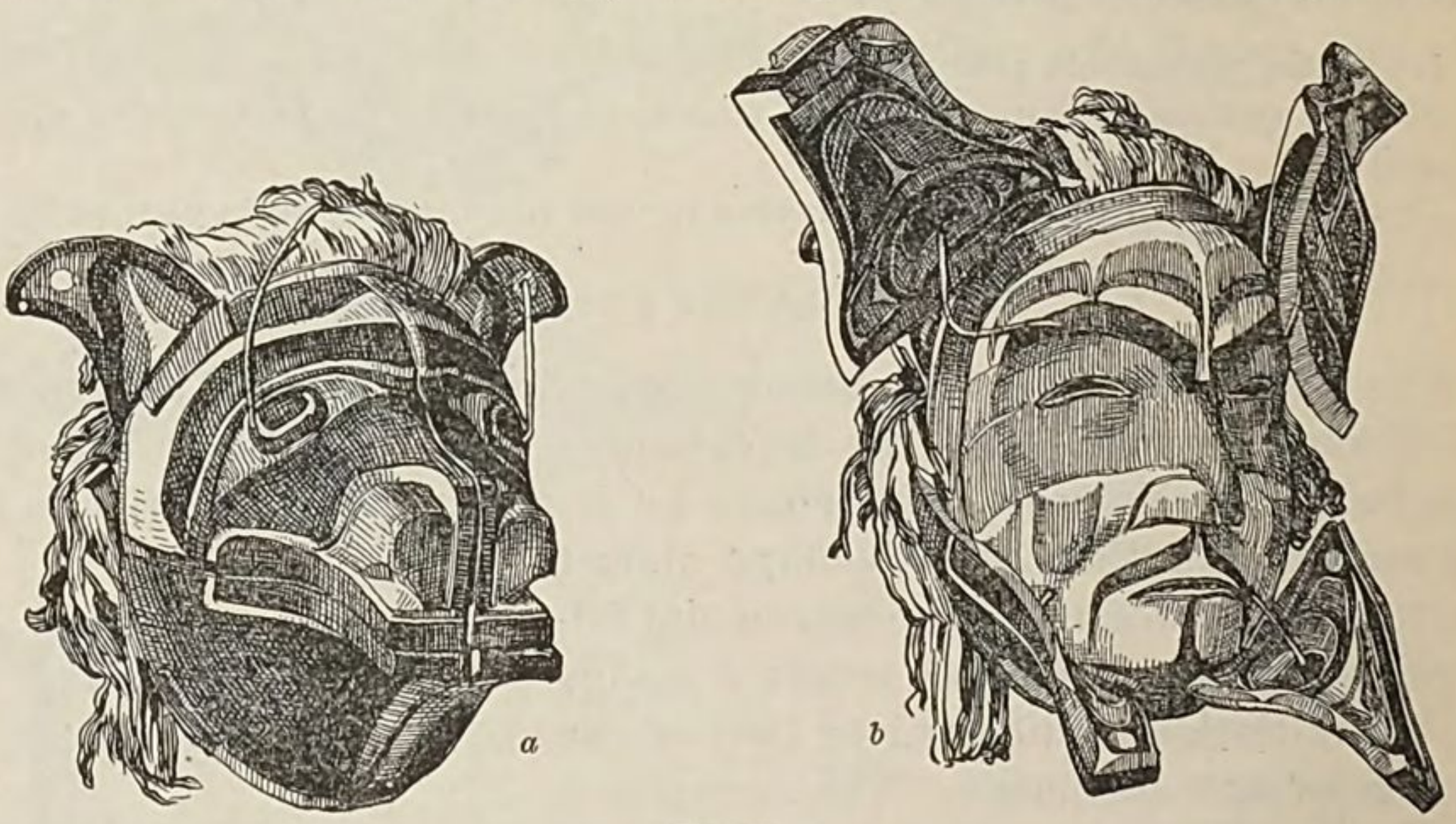
Fig. 98.
HEAD RING OF Q'Ō′MINŌQA.
La′Lasiqoala.
IV A, No. 6869, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

I will describe a few of these masks and give the songs which belong to them. Figure 99 is a ha′mshamtsEs mask, the outer figure of which represents the grizzly bear. The inner face represents Baxbakuālanu Xsī′waē. The red rim around the mask is blood, which is shown because the bear is cut open in order to make the inner face visible.

[1] Appendix, page 695.

[2] Appendix, page 696.

The painting of the face represents parts of his body. The chin tuft is at the same time the uvula. It is the opinion of the Kwakiutl that the uvula is the cause of hunger, and that BaxbakuālanuXsī'waē has a very large uvula, which is the cause of his voracity. The mustache represents his legs; the green blots on the cheeks, his body. The ears are painted over the eye, and have the shape of a raven's ears. The blue ornament on the forehead is merely painting, intended to fill a gap that did not please the artist. The peculiar shape of the nose is called "voracious nose," and is meant to indicate that he can scent man a long distance off. The name of the owner of this mask, as a member of the "seal society," is always Nā'wîs. After he joins the



a *b*

Fig. 99.

HA'MSHAMTSES MASK.

a, Mask closed, representation of the grizzly bear. Black and white; decoration of ears, red. *b*, Mask open, representation of BaxbakuālanuXsī'waē. Face, white; ring surrounding face, red; region around eyes and decoration over eyebrows, blue; decoration on cheeks, green. Breadth, 15 inches.

IV A, No. 1242, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

quē'qutsa, his name is Qalē'sEmak^{u} (=quartz sound in front of him). Following is his song:[1]

1. He is looking for food all over the world, hamāma, āma, āma, mai, hamā, mai.
2. He is looking for men all over the world.
3. He is devouring living men all over the world.
4. He is looking for heads all over the world.

SONG OF HA'MSHAMTSES.

The following song is sung in connection with the mask shown in fig. 100:[2]

1. He will sing the great dancing song of our supernatural friend whom everybody tries to imitate.
2. He will cry hāp on the beach, our supernatural friend whom everybody tries to imitate.
3. We shall see his mask which makes him go all over the world, our supernatural friend whom everybody tries to imitate.

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[1] Appendix, page 697.

[2] Appendix, page 698.

The next song belongs to the mask shown in fig. 101:[1]

1. Famous are you, your fame reaches the end of the world.
2. The people try to imitate you, even at the end of the world.
3. We shall see you dancing in our house.

The mask (fig. 102, p. 467) represents a sea monster called Ia′k·îm (badness). It opens, and the inner face represents the killer whale.

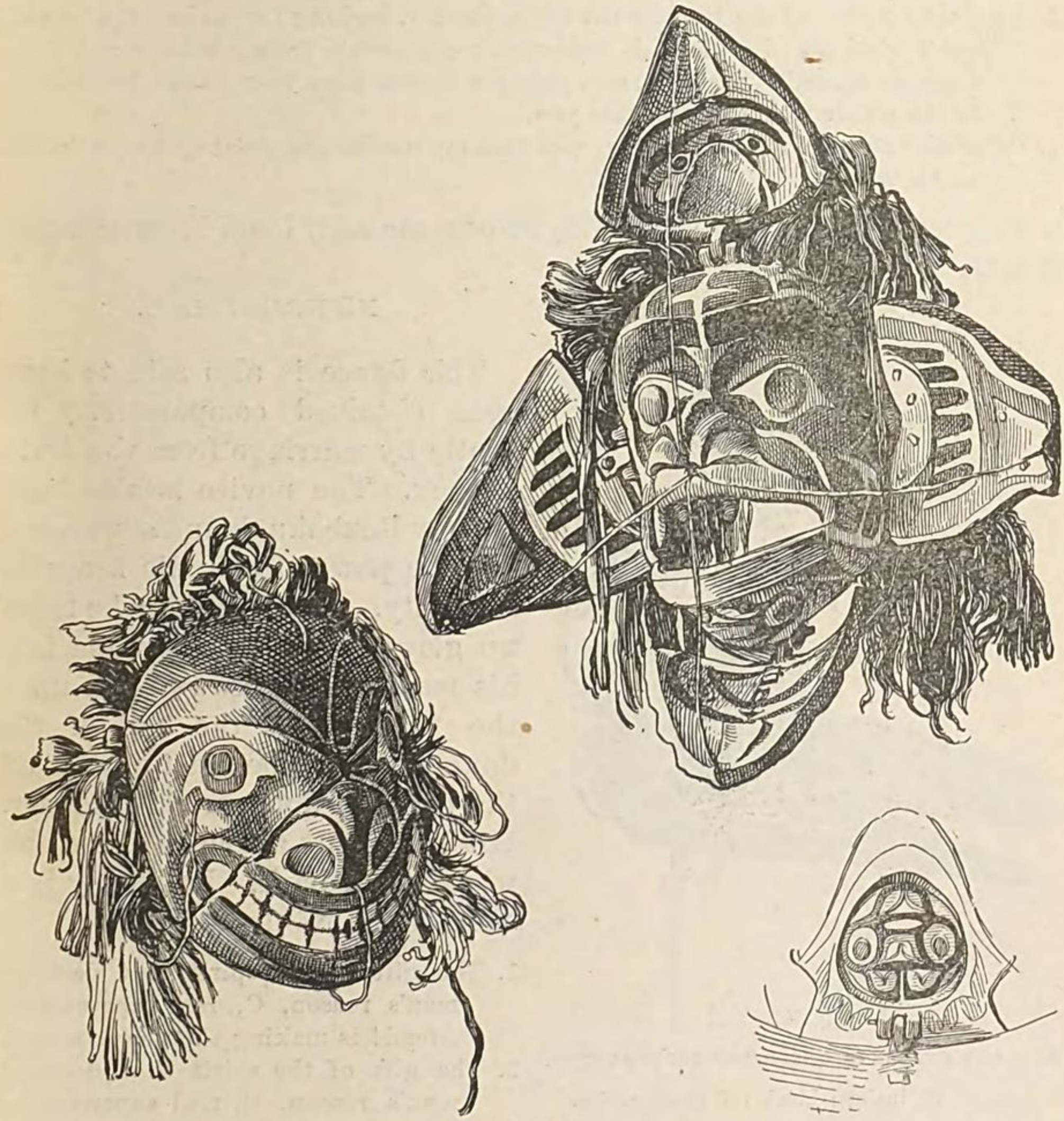

Fig. 100.

MASK OF HA′MSHAMTSES.

The small figure shows painting on the chin of the inner mask.

IV A, No. 1248, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

The dorsal fin is shown on the inside of the top flap, the fins on each side flap, and the tail on the lower flap. The song used in connection with this mask is as follows:[2]

1. You were wandering in valleys and over mountains, you great supernatural one.
2. Farther and farther you went, led by your supernatural power.
3. You went to the end of the world, led by your supernatural power.

[1] Appendix, page 700.

[2] Appendix, page 703.

4. You will sing your secret song. Everybody will imitate your hā′mats'a cry. You were the first to utter the hā′mats'a cry, you great supernatural one. You were the first one into whom BaxbakuālanuXsī′waē threw his power. Your power is desired even at the edge of the world. Everybody desires to possess your powers.

In connection with the mask shown in fig. 103 (p. 468) the following song is sung:[1]

1. "I went all around the world with my protector, looking for food on the beach."
2. "Thus I went and he took his cedar bark ornaments from his body and hung them on to me." Therefore everybody wishes to have your power, but nobody in the whole world can imitate you.
3. "For me cried the raven. His cry put into my mouth the great Qoā′xqoaXuā′lanuXsī′waē.

Figures 104 to 110 (pp. 469–473) show some additional ha′mshamtsEs masks.

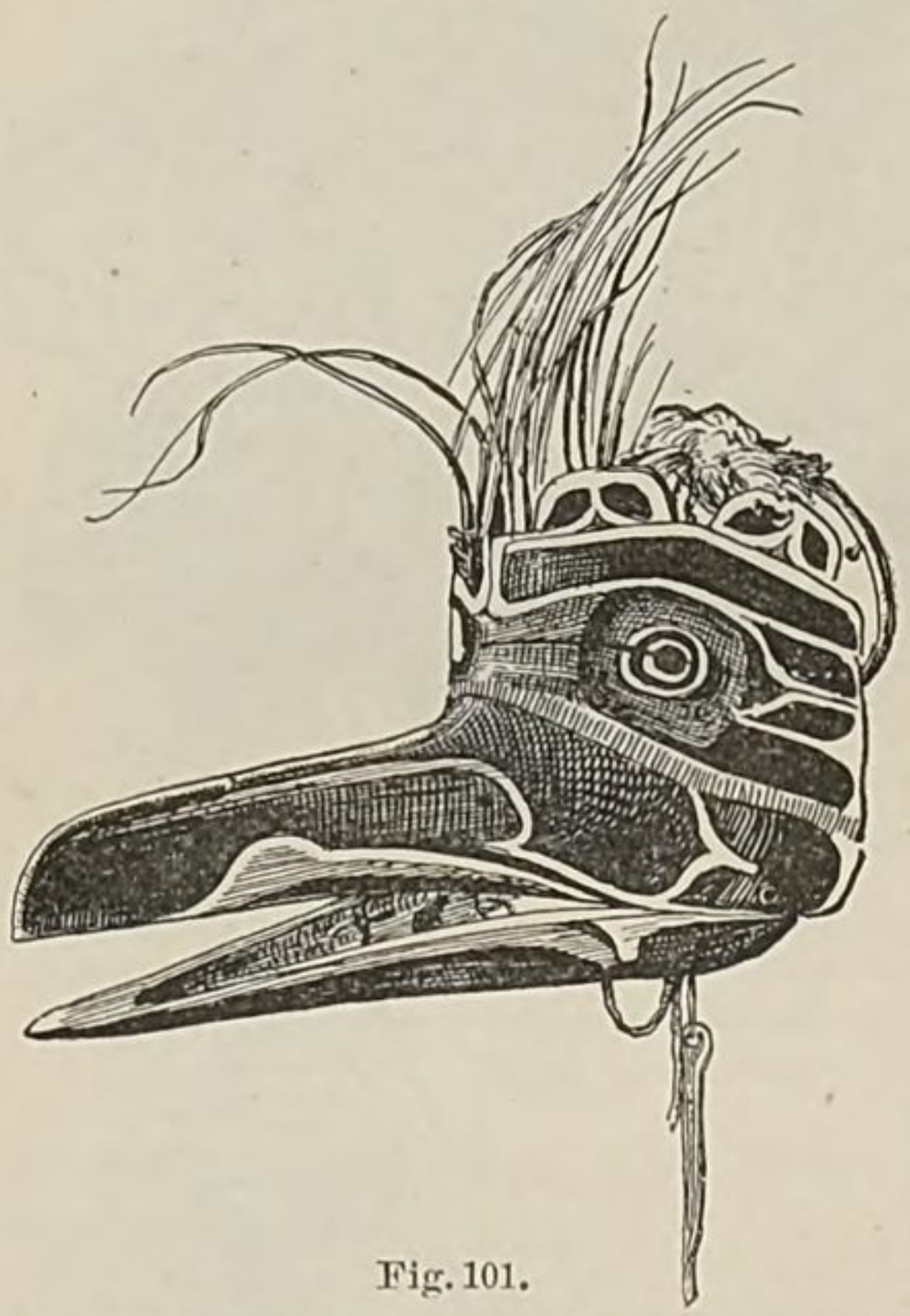

Fig. 101.

MASK OF HA′MSHAMTSES, REPRESENTING THE RAVEN.

Length, 17¾ inches; black, red, green, white.

IV A, No. 1247, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

NŌ′NTSÎSTĀLAL.

This dance is also said to have been obtained comparatively recently by marriage from the Awī′k·'enôx. The novice is also initiated by BaxbakuālanuXsī′waē, and has the power to handle fire with impunity. In his ecstasy he takes up glowing coals, puts them into his mouth, and throws them upon the people. At the end of the dancing season he must pay for all the damage done in this manner. His ornaments are made of red and white cedar bark. Following is a song of the Nō′ntsistālaL:[1]

1. The gift of the spirit that destroys man's reason, O, real supernatural friend! is making the people afraid.
2. The gift of the spirit that destroys man's reason, O, real supernatural friend! scatters the people who are in the house.

NĀ′NĒ, THE GRIZZLY BEAR.

There are two degrees of this society, BaxbakuālanuXsī′waē's grizzly bear and the ordinary grizzly bear. The former is the higher in rank. Both are among the most important members of the seal society. While all the preceding ones belong to the laxsâ, they are wī′xsâ.[2] Therefore at the time of the initiation they are not taken away by the spirit, but are only hidden in a corner of the house, whence they come

[1] Appendix, page 705.

[2] See page 420.

DRESS OF WALAS NĀ'NĒ.

From A. Bastian, "Northwest Coast of America."

forward when they are ready, to show that they have been initiated. They are perhaps the most dreaded helpers of the hā′mats'a, as it is their duty, in conjunction with the nū′LmaL, to punish all transgressions of laws referring to privileges of the hā′mats'a, or to the winter ceremonial in general. I stated before that the penalty of some mistakes was death. The unfortunate ones were killed by the grizzly bears and nū′LmaL. They are also the watchers of the dancing house, and often with the other members of the seal society assemble on the roof, and by their wild cries and threatening attitude frighten away everybody. They always wear bear's claws on their hands, and sometimes appear clad in bearskins. Their faces are painted in imitation of an immense mouth of a bear. Their head rings and neck rings are made of red and white cedar bark. Each of these is twisted in a tight rope. Then they are twisted around each other and tied at their ends

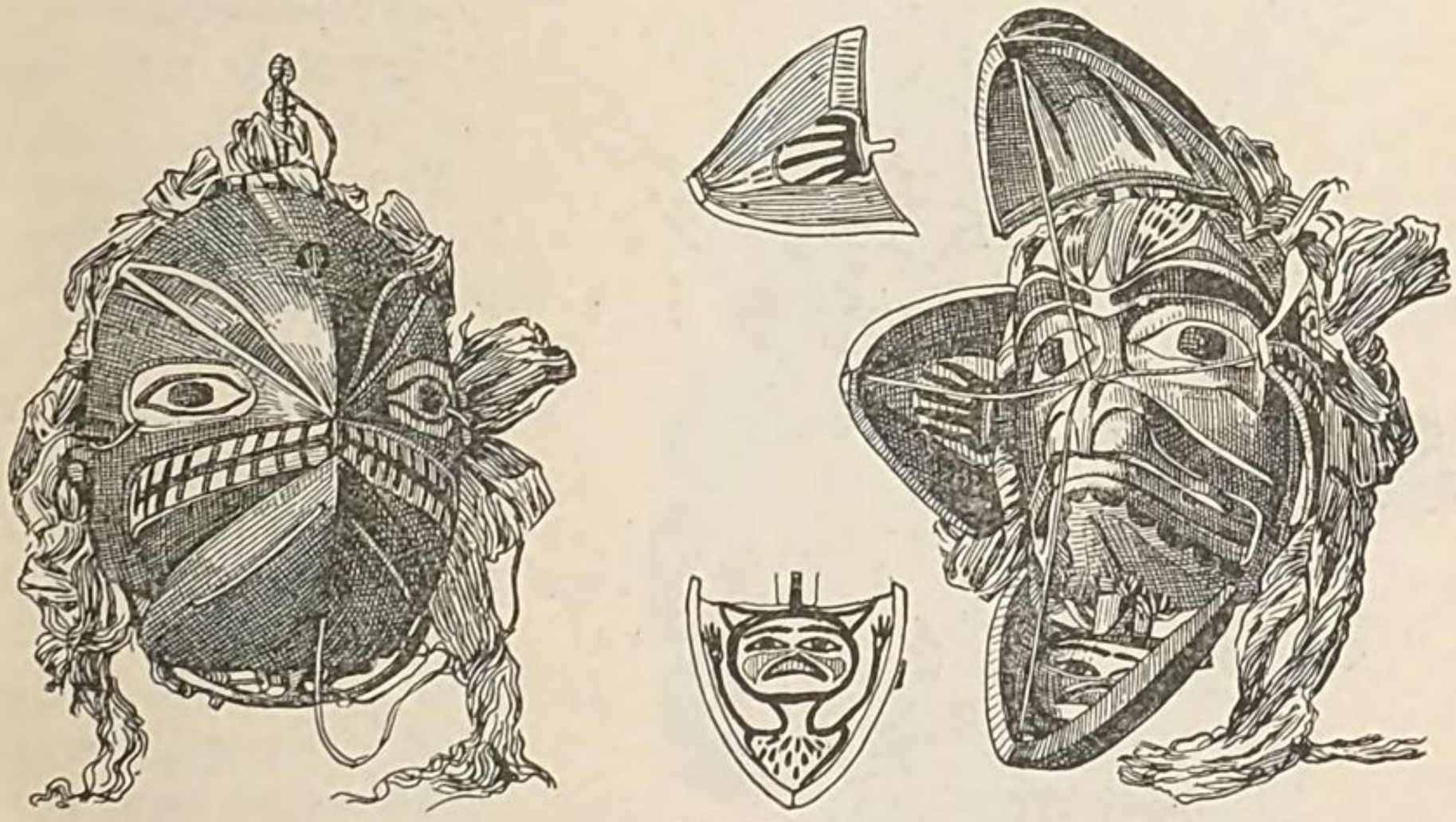

Fig. 102.

MASK OF HA′MSHAMTSES: OUTER MASK, THE SEA MONSTER IA′KÎM; INNER, THE KILLER WHALE.

The small figures show the inner sides of the lateral and lower flaps when open. (Height, 17¾ inches; outer mask black and white; inner, blue, black, white, red.)

IV A, No. 565, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

(figs. 111, 112, pp. 473, 474). Their circuit around the fire can hardly be called a dance. In the first and the third dances the dancer wears his cedar bark ornaments. The dances consist in violent motions of the body, imitating the actions of a bear who sits on his haunches. Every now and then the dancer growls and scratches the ground with his paws. In the second and fourth dances he appears clad in a bearskin, walks on hands and feet, and paws the ground, imitating the motions of an angry bear.

SONG OF A BEAR DANCER NAMED WALAS NĀ′NĒ (GREAT BEAR).[1]

1. How shall we hide from the bear that is moving all around the world?
2. Let us crawl underground! Let us cover our backs with dirt that the great terrible bear from the north end of our world may not find us.

[1] See Plate 32, and Appendix, page 705.

ANOTHER SONG OF A BEAR DANCER, LA'LASIQOALA.

Haiōō' a haiōō'! Let your great name be called, Great Bear!
You will go at once to the chiefs of the tribes, whom you will make your slaves, Great Bear!
Then we shall have war!
Then we shall have trouble!

THE NŪ'LMAL.

The nōō'nLEmaLa (pl. of nū'LmaL) or "fool dancers" are also messengers and helpers of the hā'mat'sa, who help to enforce the laws referring to the ceremonial. Their method of attack is by throwing stones at people, hitting them with sticks, or in serious cases stabbing and killing them with lances and war axes.

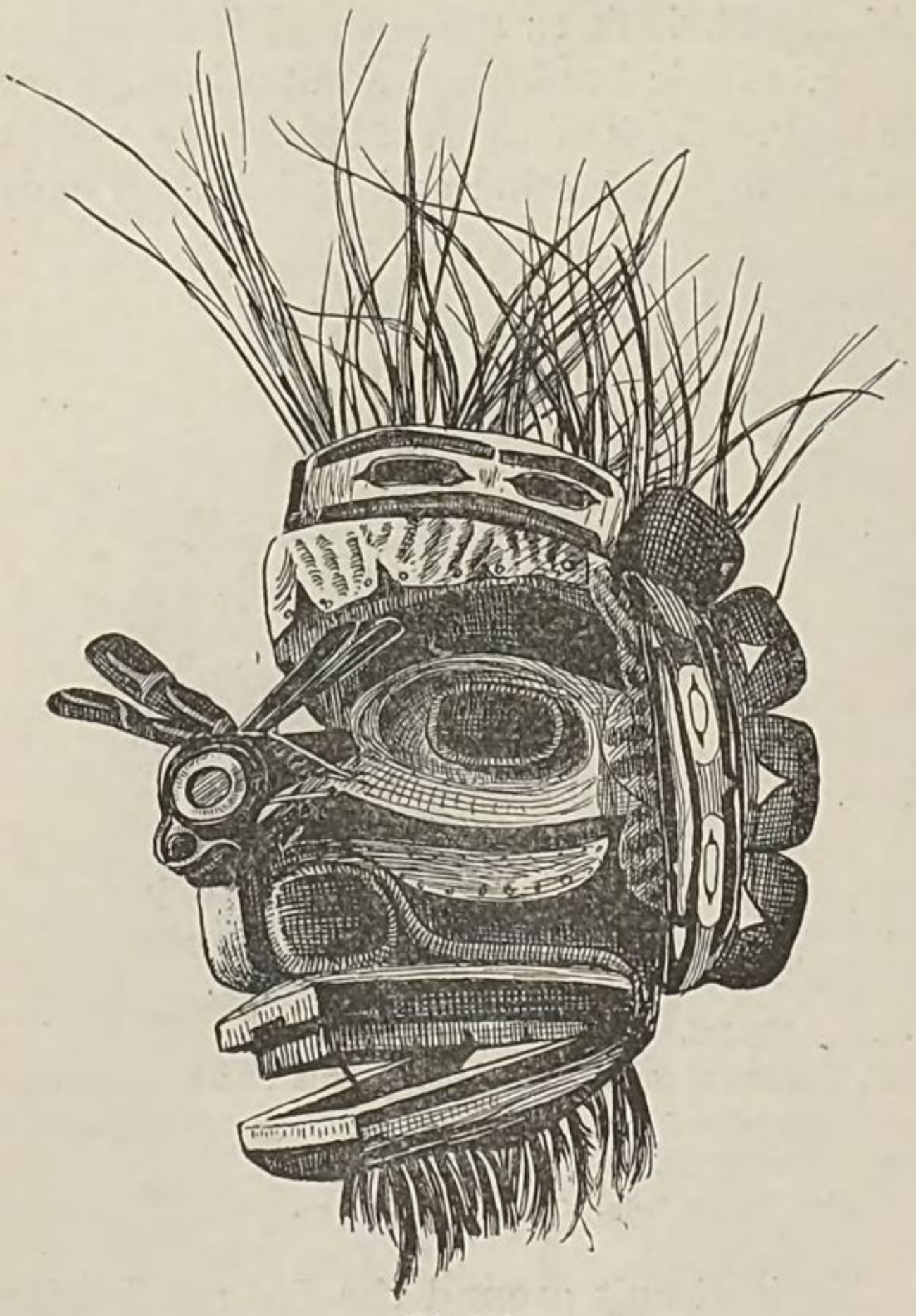

Fig. 103.
MASK OF HA'MSHAMTSES.
Height, 17½ inches; white, red, black.
IV A, No. 917, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

The nōō'nLEmaLa are initiated by a fabulous people, the Ā'Lasîmk·, who are believed to live near a lake inland from LîXsī'waē. Their village is believed to be on an island floating on the lake. They have enormous noses and their bodies are covered with snot. In olden times a man went beaver hunting and fell in with these people. He came back exhausted and "crazy." His nose was running all the time; he ate the mucus and smeared it all over his body. He urinated and defecated in the house, and only after a long time did the people succeed in restoring him to his senses.

From him the nōō'nLEmaLa are said to derive their origin. They are supposed to be out of their senses and to have long noses. They are as filthy as the first nū'LmaL is said to have been. Some of them when initiated are taken away by the Ā'Lasîmk·, others are initiated in the house. The nōō'nLEmaLa are wī'xsâ. Those who are to be initiated in the house will all of a sudden begin to scratch their heads and bodies. They scratch more and more violently. This indicates that they are

[1] Appendix, page 705.

THE NŌŌ'NLEMALA.
From a photograph.

MASK OF NŪLMAL.

British Museum.

possessed by the winter dance spirit. After four days they are confined in the corner of the house, and appear as nōō'nLEmaLa at the time of the next dance. When a young man is to be initiated in this order, the old nōō'nLEmaLa will throw mucus from their nose on to him and thus "throw the spirit of the winter ceremonial into him."

The nū'LmaL, according to what was stated above, is filthy and acts as though he was out of his senses. His cry is wē, wē, wē. Paintings of fool dancers are shown on Plate 33. They do not dance, but, when excited, run about like madmen, throwing stones, knocking people down, and crying. They turn to the right instead of to the left, and make the circuit of the fire turning to the left. Then the quē'qutsa try to correct them, but they grow only the more excited. They dislike to see clean and beautiful clothing. They tear and soil it. They break canoes, houses, kettles, and boxes; in short, act the madman in every conceivable way. At the close of the dancing season they must indemnify the owners for all the property destroyed.

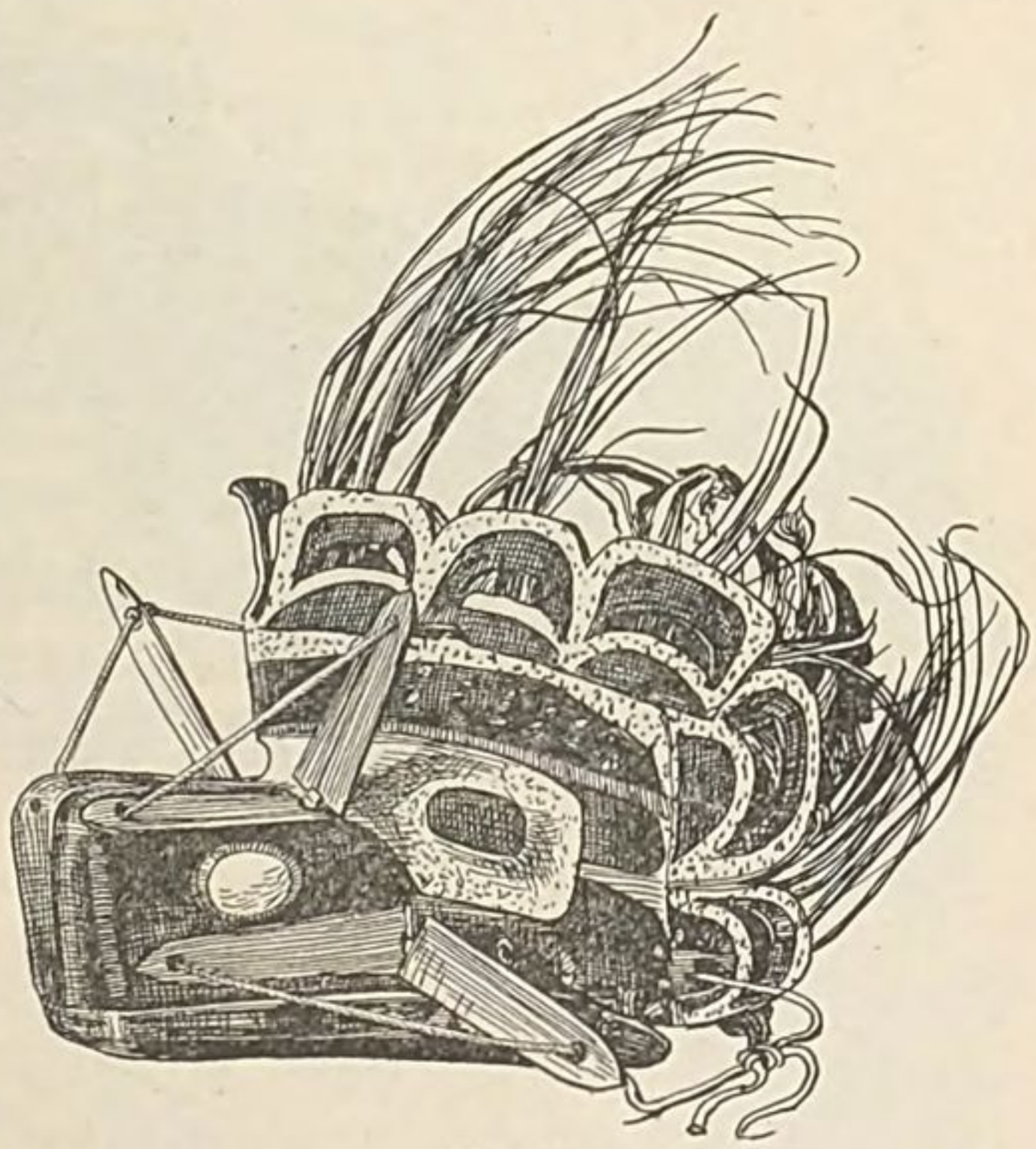

Fig. 104.

MASK OF HA'MSHAMTSES.

Length, 13¾ inches; black, white, red.

IV A, No. 1241, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

The nōō'nLEmaLa wear lances and war clubs during the ceremonials, with which they kill the offenders of the hā'mats'a (figs. 113–116, pp. 475, 476). Many of these lances are carved and painted with the design of the raven. The nōō'nLEmaLa wear rings of red cedar bark, which is simply tied around their heads and hung around their necks. It is not plaited.

When they first appear after their initiation, and also when performing their ceremonial dance they use masks. All these masks are characterized by long noses of curiously round shape. The face is surrounded by a red ring which represents the red cedar bark. The type of these masks has not changed during the last century. There is one in the U. S. National Museum that was collected by the Wilkes Expedition (fig. 117, p. 477). Another old specimen is in the British Museum (Plate 34). The similarity of this type of mask and of the newer ones collected of late years will be noticed (figs. 118–122, pp. 477–479). Any mention of a long nose excites the nū'LmaL. He does not allow his nose to be touched.

SONG OF NŪ′LMAL.[1]

Go on! go on! go on! you great one! Do you not see the curdled blood on the water, the blood on the water of the many foes whom I killed and cut to pieces? I shall be the greatest nū′LmaL.

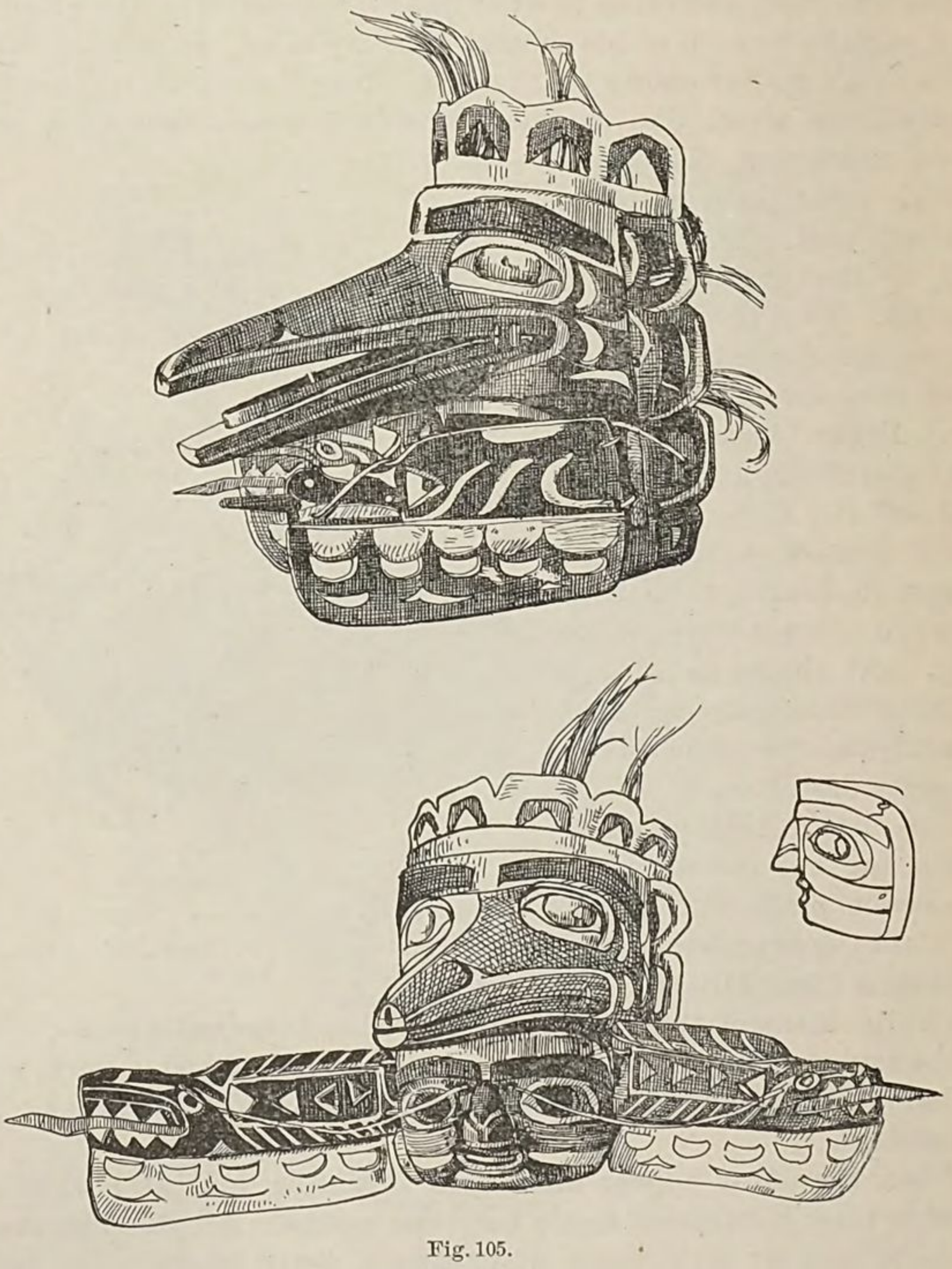

Fig. 105.

MASK OF HA′MSHAMTSES.

The upper portion represents the raven, and the lower portion the wings of the raven, on the outside, and the sī′siuL inside. The smaller figure shows the profile of the lower face. Length, 18½ inches; black, white, red.

IV A, No. 1250, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

The name of the dancer to whom this song belongs is Nū′LElag·ilîs as a member of the seal society, and Tsauxstâ′lag·ilîs as a member of the quē′qutsa.

[1]Appendix, p. 706.

SONG OF NŪ'LMAL.[1]

1. Ha! The great madness came down and is disturbing our friend.
2. (NŪ'LMAL says:) "The weapon flew into my hands with which I am murdering, with which I am cutting off the heads."
3. Ha! The great madness entered our friend and he is killing old and young.

SONG FOR PACIFYING THE EXCITED NŪ'LMAL.[1]

1. Great is the fury of these supernatural ones.
2. He will carry men away on his arms and torment them.
3. He will devour them skin and bones, crushing flesh and bones with his teeth.

SONG OF NŪ'LMAL, LA'LASIQOALA.[2]

1. Oh wonder! He is making a turmoil on the earth.
2. Oh wonder! He makes the noise of falling objects on the earth.
3. Oh wonder! He makes the noise of breaking objects on the earth.

There is a chief NŪ'LMAL, who is called G·ēqamēq'ō-LELa or Ō'maq'ō'LELa. It is stated that nine generations ago TSEX'UĒ'TĒ, chief of the SĪ'SÎNLAĒ, had a son who was a NŪ'LMAL. He gave a feast and said that he wanted to make his son chief of all the NŌŌ'NLEMALA and call him G·ē'qamēq'ōLELa. He sent him to be initiated as a NŪ'LMAL once more, and when he came back, he distributed an immense amount of property, sea-otter skin blankets, canoes, slaves, coppers, etc. As he was unable to bring all this property into the house, he scattered eagle down, which symbolized the property, all over his guests. Since that time "property is the lance of the G·ē'qamēq'ōLELa," and the father of a new G·ē'qamēqōLELa must distribute all his property at the time of the initiation of the novice.

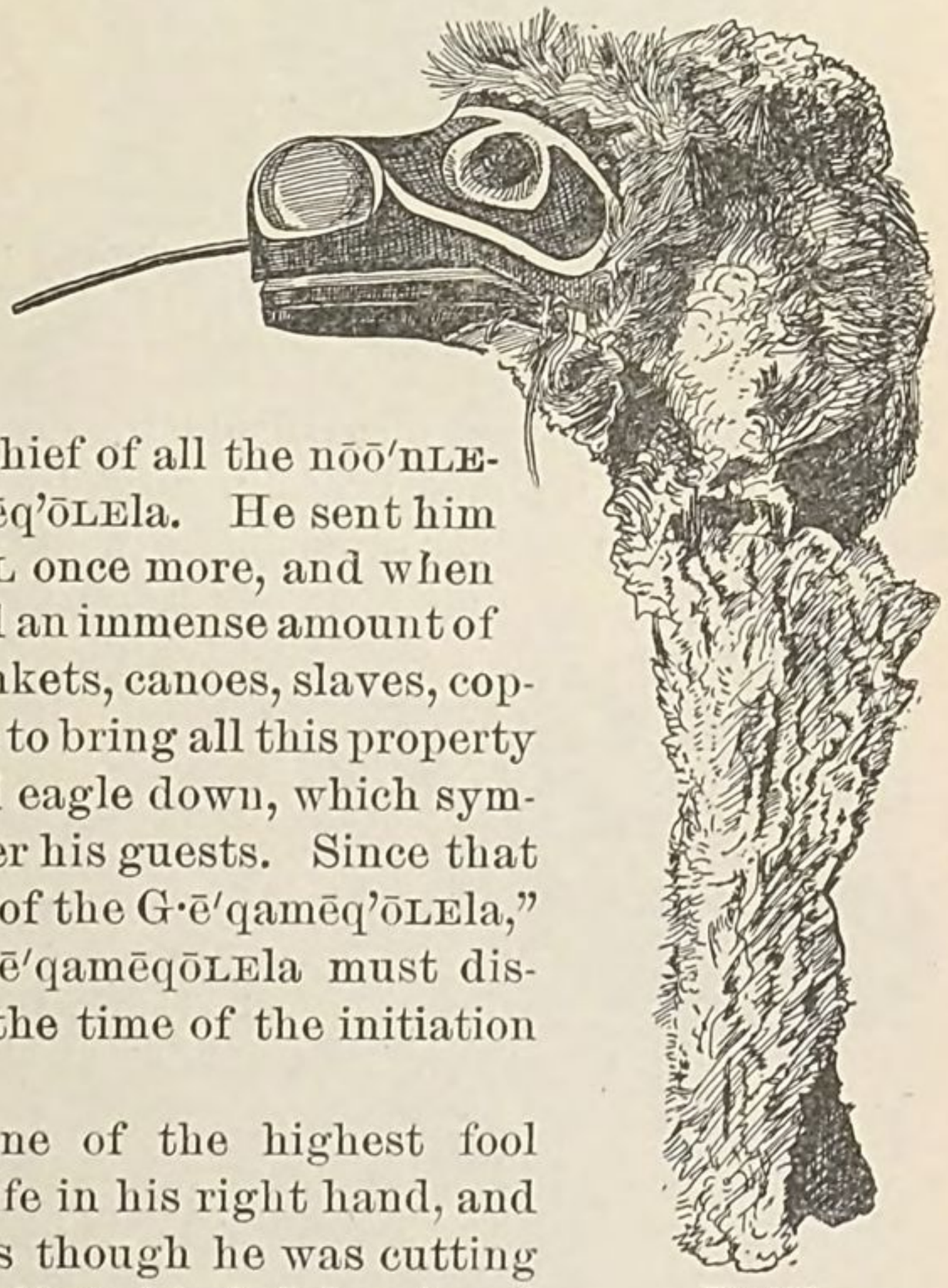

Fig. 106.
MASK OF HA'MSHAMTSES, REPRESENTING THE BEAR.
Length, 15 inches; white, red, black.
IV A, No. 1255, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

The HĀ'WAYADALAL is one of the highest fool dancers. He carries a knife in his right hand, and moves it along his neck as though he was cutting it. Then he changes the knife to his left hand, and repeats the same motion. In doing so he stabs himself, or pretends to do so, actually stabbing his neck ring, which is filled with a bladder containing blood.

NĀ'NAQAUALIL.

The dance of the NĀ'NAQAUALIL consists in very rapid motions of the body from right to left, according to the rhythms of the song. The trunk is slightly inclined forward, the hands are open and held upward,

[1]Appendix, page 706. [2]Appendix, page 707.

with the palms toward the front and at about the height of the shoulders. The dancer wears a blanket which is ornamented with feathers sewed all over it at regular intervals of about 10 inches, and a head mask with a long beak surmounting his forehead (figs. 124 and 125, p. 479).

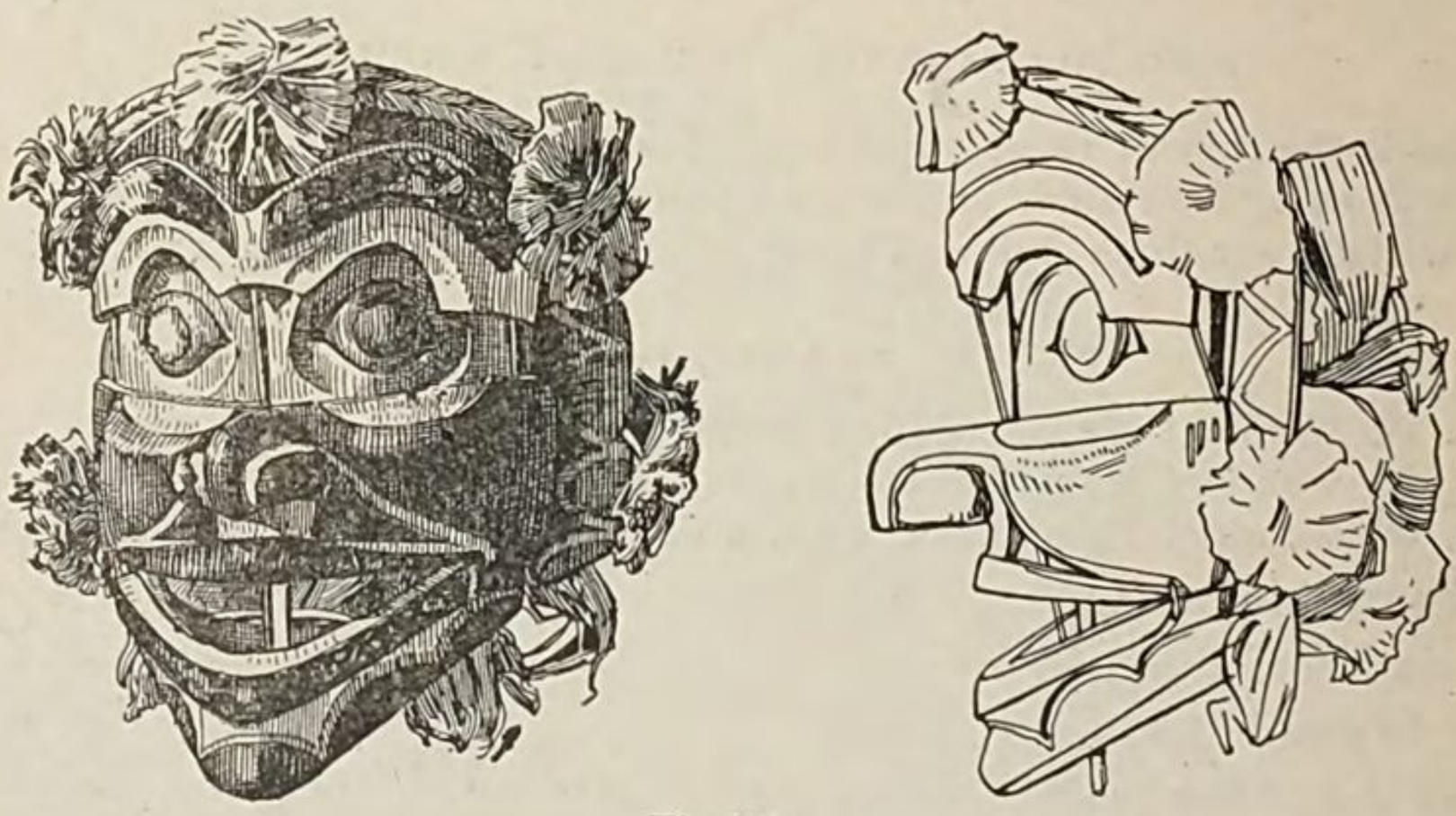

Fig. 107.

MASK OF HA'MSHAMTSES WITH MOVABLE JAW AND FOREHEAD.

Height, 13½ inches; black, white, red.

IV A, No. 1239, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

The dance is sometimes also called "the dance of the wind." The lively motions of the blanket are supposed to be caused by the winds of the higher regions of the atmosphere (Plate 35). The dancer is initiated at BaxbakuālanuXsī'waē's house. He is wī'xsa.

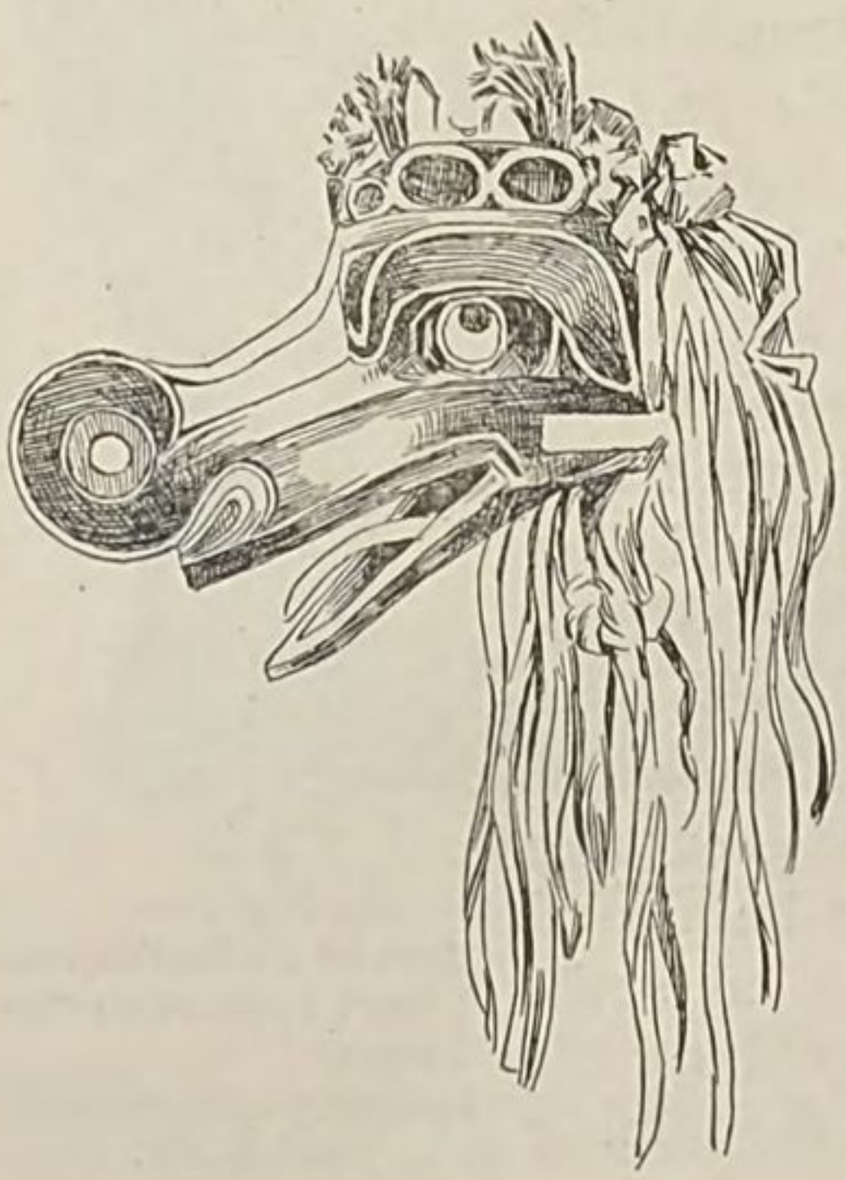

Fig. 108.

MASK OF HA'MSHAMTSES.

From a sketch made at the World's Columbian Exposition

SONG OF NĀ'NAQ\UALIL.[1]

1. The people gather all around you to see your dance, great supernatural one.
2. Many gather to see you, great supernatural one.
3. They walk right up to your house, great supernatural one, asking you for food.

SONG OF NĀ'NAQAUALIL.[2]

1. Rows of wealth are standing across the floor of the house. That is your song.
2. Everybody will obtain wealth from you. Everybody will obtain blankets from you. That is your song.

SONG OF NĀ'NAQAUALIL.[2]

The Awī'k·'ēnôx first obtained the mask (fig. 126, p. 480) from the Hē'iltsuq. Q'ō'mEnakula, a chief of the La'Lasiqoala clan G·ē'xsEm, married an Awī'k·'ēnôx girl, and obtained in this way the right to the mask. The Hē'iltsuq, however, did not

[1] Appendix, page 707.

[2] Appendix, page 708.

NĀ'NAQAUALIL DANCE.
From a photograph.

want the La'Lasiqoala to have it. They invited the Awī'k·'ēnôx to a place named Qoā'qumē, under the pretext that they were going to give a feast. When the Awī'k·'ēnôx came, they killed many of them, among others the father of Q'ō'mEnakula's wife. Thus the Hē'iltsuq recovered the mask, and Q'ō'mEnakula could not obtain it. Later on he obtained it by marrying the daughter of the Hē'iltsuq who had killed his father-in-law. The mask is called by the Awī·'k'ēnôx ha'mtsEtsowē. It represents the raven and the hō'Xhokᵘ.

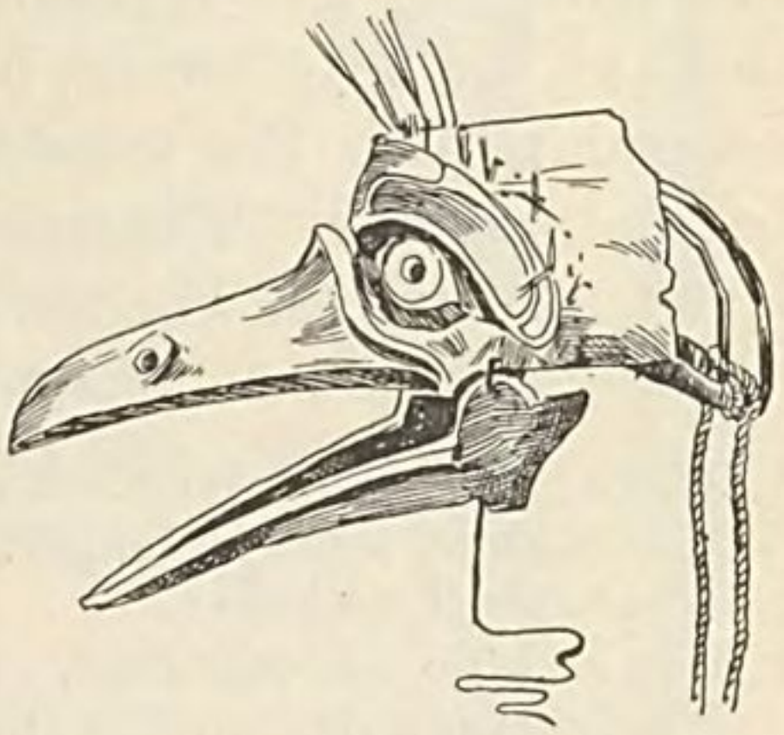

Fig. 109.

MASK OF HA'MSHAMTSES, REPRESENTING THE RAVEN.

From a sketch made at the World's Columbian Exposition.

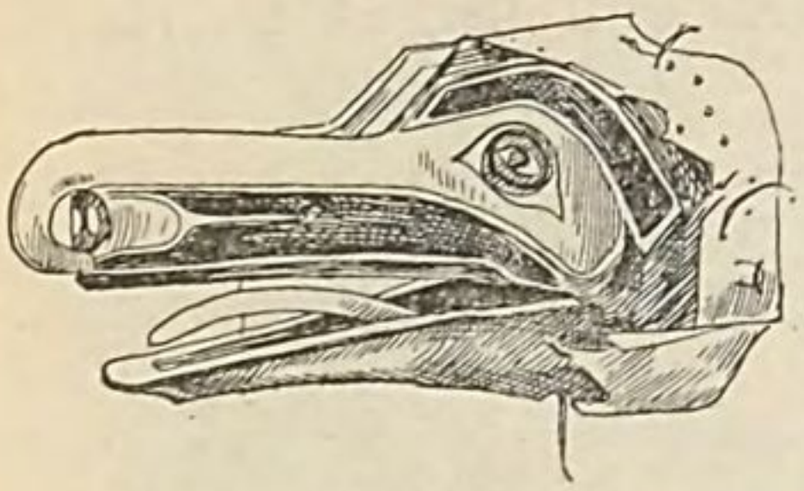

Fig. 110.

MASK OF HA'MSHAMTSES.

From a sketch made at the World's Columbian Exposition.

Its name and song show its connection with the hā'mats'a ceremonies. The skulls which are attached to the mask commemorate the war which was waged on account of it.

1. I am coming, crying hāp on the beach! I, the supernatural one.
2. I am coming out of Wīnā'lag·ilîs's canoe, the hā'mats'a mask on my forehead, the winter dance mask on my forehead.

Figs. 127–128 show masks very much like the preceding one. They also belong to the dance Nā'naqaualiL. On page 410 was told the legend of the origin of the sunrise dance of the Koskimo. Figs. 129 to 133 (pp. 484–486), show the masks and ornaments which the Kuēxala'lag·ilīs obtained from Nēnalaats'ēqa.

Fig. 134 (p. 488) shows the ornaments of another Nā'naqaualiL.

Fig. 111.

HEAD RING, NECK RING, AND ARM RINGS OF BEAR DANCER.

IV A, Nos. 934, 557, and 935, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

HĀ''MAA.[1]

This mask was purchased from the La'Lasiqoala, who called it qē'sqēsk·änē, the panther. They obtained it by marriage from the Kwakiutl, who used it in the winter ceremonial. It represented the fabulous being hā''maa, a voracious carnivorous monster which lives

[1] See fig 135, p. 489, and Appendix, page 708.

in the woods. The novice who is to acquire this dance disappears in the woods. When he returns, he bites the people, not like the hā′mats'a, but imitating the voracious hā″maa. His cedar bark rings are like those of the bear dancer, but smaller. His cry is "hup! hup!" When returning from the woods, he does not wear hemlock, but red cedar bark ornaments. The dancer's name as member of the seal society is K·'ē′k·aLElayu (of whom all are afraid); his quē′qutsa name is ĀLtsala (coming ashore from the middle of the lake). His song is as follows:

1. There is hā″maa. We shall not live, for he is there.
2. Where he is, there is danger.
3. Where shall we hide?
4. Let us hide underground. Let us cover ourselves with dirt, for the terrible hā″maa is going around the world.

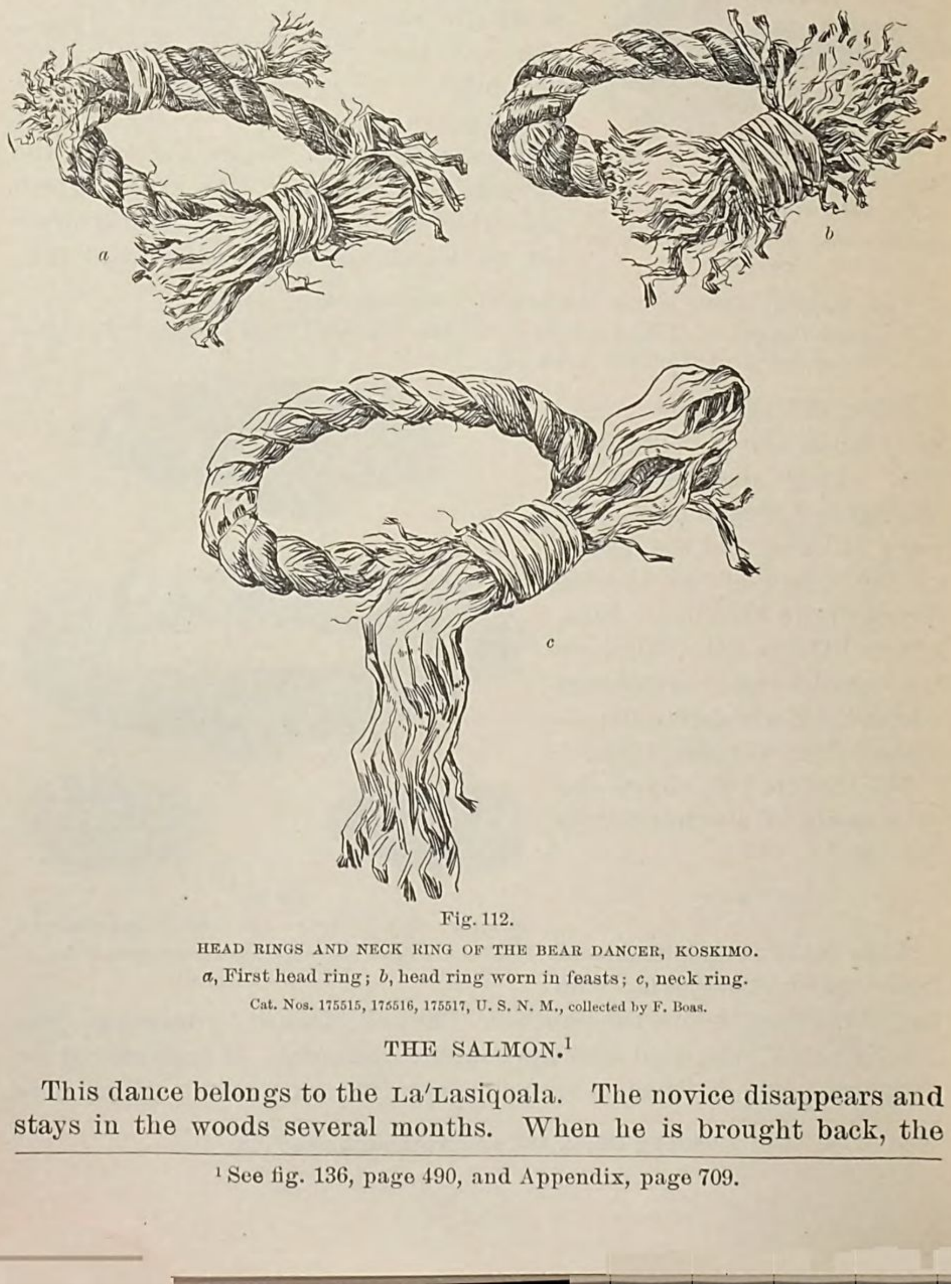

Fig. 112.

HEAD RINGS AND NECK RING OF THE BEAR DANCER, KOSKIMO.

a, First head ring; *b*, head ring worn in feasts; *c*, neck ring.

Cat. Nos. 175515, 175516, 175517, U. S. N. M., collected by F. Boas.

THE SALMON.[1]

This dance belongs to the LA′LASIQOALA. The novice disappears and stays in the woods several months. When he is brought back, the

[1] See fig. 136, page 490, and Appendix, page 709.

people hide all the eagle down, the symbol of wealth, but put it on when he enters, indicating that the salmon brings affluence. He is greeted with the cry "haiohō'." The amount of property distributed by the dancer's father is as large as that needed for initiating a hā'-mats'a. His dance is intended to imitate the motions of the jumping salmon. He holds his head sideways and dances with stiff legs, the feet remaining at the same spot, the body turning first to the right then to the left. His forearms are bent upward, the open palms stretched forward. Following is his song:

1. Many salmon are coming ashore with me.
2. They are coming ashore to you, the post of our heaven.
3. They are dancing from the salmon's country to the shore.
4. I come to dance before you at the right-hand side of the world, overtowering, outshining, surpassing all; I, the salmon.

SONG OF A SALMON DANCER.[1]

1. The salmon came to search for a dancer.
2. He came and put his supernatural power into him.
3. You have supernatural power. Therefore the chief of the salmon came from beyond the ocean. The people praise you, for they cannot carry the weight of your wealth.

THE SALMON WEIR DANCE.[2]

The weir in the legends of the Kwakiutl is a toy of the salmon. The salmon weir dancer is initiated by the salmon. The dance belongs at present to the Maa'm-tag·ila, who obtained it by marriage from the Awī'-k·'ēnôx. The novice remains in the woods for about one month. When he returns, he is naked. His body is smeared with the juice of a plant, which makes it very slippery. His cedar bark ornaments are similar to those of the hā'mats'a, but much smaller. The dancer first rests on one leg, his body bent almost horizontally at one side, the other leg extended to the other side. Then he changes to the other leg, bending his body to the other side and extending his other leg. Here is his song:

1. I went to work at my salmon weir. When I took out the salmon, their eyes were picked out by the crows.
2. (Speaking to the chief of the tide:) Stand still, chief! You who makes the tide rise, who causes whirlpools where the tides meet, whose skirt of seaweeds makes the tide rise.
3. (Chief of the tide says:) Cry hāp! supernatural one! Cry hāp!

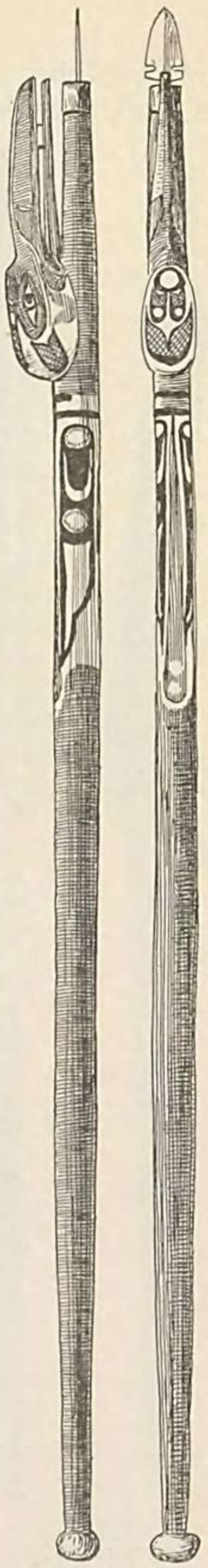

Fig. 113.

LANCE OF NŪ'LMAL.

Length, 64 inches; brown, red, green.

IV A, No. 1596, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

[1] Appendix, page 709.

[2] Appendix, page 710.

WASP DANCE—HA′MASELAL.[1]

According to the legend, this dance belongs originally to the Ts'E′nts'Enx·q'aiō, to one of whose ancestors the chieftainess of the Wasps appeared. There is only one person at a time owning this dance. I obtained only one line of the song:

1. Do not let us go near the house of the wasp.[2] There is great danger.

KU′NXULAL, THUNDER BIRD DANCE.[3]

1. You are swooping down from heaven, pouncing upon a whole tribe.
2. You are swooping down from heaven, burning villages, killing everything before you, and the remains of the tribes are like a rest of your food, great thunder bird; great thunderer of our world.
3. You are swooping down from heaven, going from one tribe to the other. You seize with your talons the chiefs of the tribes.

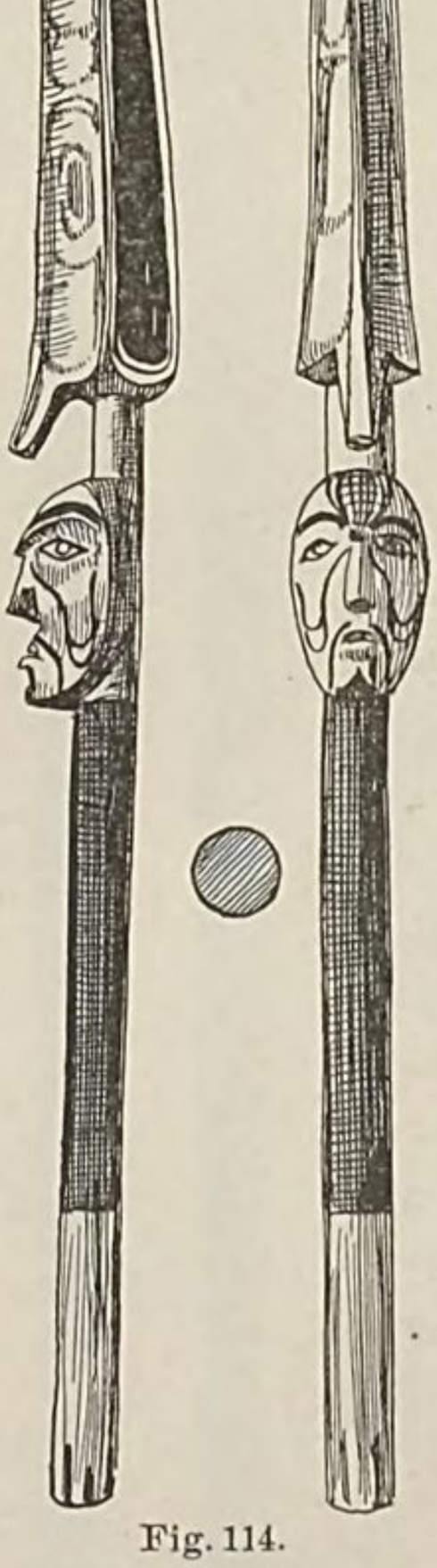

Fig. 114.

LANCE OF NŪ′LMAL.

Length, 52 inches; red, black.

IV A, No. 872, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

KU′NXULAL, LA′LASIQOALA SONG.[3]

This will be the dance of the thunderbird. Wonderful will be the dance of the thunder bird.

Fig. 115.

LANCE OF NŪ′LMAL.

From a sketch made at the World's Columbian Exposition.

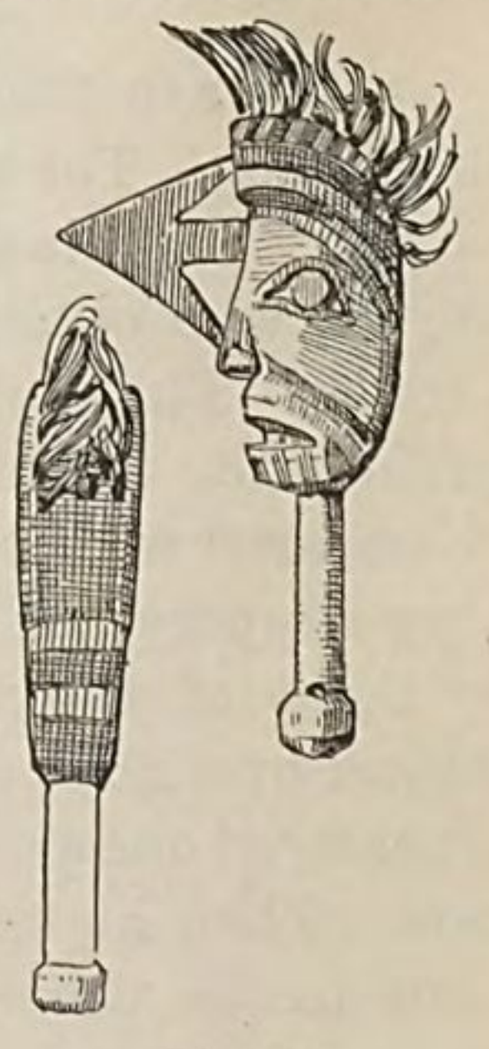

Fig. 116.

CLUB OF NŪ′LMAL.

Length, 10¼ inches; blue, red.

IV A, No. 863, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

QŌ′LÔC,[4] LA′LASIQOALA SONG.[3]

1. Do not let us drive him away, the bird of our chief.
2. The real Qō′lôc who is sitting in the middle of our world.

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[1] See fig. 137, page 491, and Appendix, page 710.
[2] The wasp nest.
[3] Appendix, page 711.
[4] A species of eagle.

THE WALAS'AXA'.

The whistle (fig. 139, p. 492) is used by the dancer to imitate the sound of the bird represented by the mask (fig. 138, p. 491).

THE WOLF.[1]

1. I go to the seat of the chief of the wolves. Yihihi ahahi.
2. I am taken to the middle of the rear of the house of the wolves. Yihihi ahahi.
3. Thus I obtained all the supernatural powers of the wolves. Yihihi ahahi.

WOLF SONG, LA'LASIQOALA.[1]

1. I come barking on the beach. I make the noise of distributions of blankets, for you will be as great as your ancestor, the first one of all the chiefs.
2. Wonderful are the words of our chief, the wolf. It is said: We shall assemble with our children, asking him to give blankets, to give blankets to each tribe, even to all the tribes of the world. Yihēi.
3. Let us try to pacify our chief, else he will swing his death bringer and cut short our lives, and we shall fall before the chief of the wolves. Yihēi.

WĀLAS'AXA'.[2]

The Wālas'axa' is a peculiar wolf's dance. It belongs to the legend of O'maxt'ā'laLē (see p. 382), who obtained it by marrying the daughter of Qāwatiliqala. The Wālas'axa' is danced in the following way: All the men of the tribe dress in blankets and headdresses representing the wolf. They hide behind a curtain which stretches across the rear of the house, and when the singers open their song, come forth from the right-hand entrance of the curtain. There two criers are stationed, who hold staffs and announce their arrival. As soon as a dancer appears, he turns and proceeds on a march around the fire. The fists are held forward, the thumbs erect (Plate 36). When the dancers arrive in front of the door, they turn once and then proceed around the fire, disappearing again behind the curtain, at the left-hand side. When all have disappeared, two more circuits are made in the same manner. In the fourth circuit they stop when all have come out. They squat down on hands and feet, imitating the motions of wolves. They rest on their toes and knuckles and turn their heads to the right and to the left.

Fig. 117.
MASK OF NŪ'LMAL.
Cat. No. 2659, U. S. N. M.
Wilkes Expedition.

Fig. 118.
MASK OF NŪ'LMAL.
Height, 9¾ inches; black, red.
IV A, No. 1297, Royal Ethnographical Museum, Berlin.
Collected by A. Jacobsen.

In fig. 140 (p. 493) and in Plate 37 a number of the masks used in the Wālas'axa' are shown. Some of these claim particular interest, as they

[1] Appendix, page 711.

[2] The great one from above.

were collected on Cook's expedition, and show that no change of the type of these masks has taken place during the last century. The teeth of the mask (Plate 37) are made of dentalia, and the trail is carefully worked of cedar bark.

Fig. 119.
MASK OF NŪ'LMAL.
Height, 14 inches; black, red.
IV A, No. 1289, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

THE LŌ'KOALA.

There is still another wolf dance, which is derived from traditions of the initiation of men by the wolves. The tradition underlying this dance is that of Mink and the wolves. The sons of the chief of the wolves were preparing to be initiated. Mink found and killed them and thus obtained their names and places. He came back wearing the wolf's scalp as a head mask. Three times he danced around the fire, covering his face and his head with his blanket. Then the fourth time he uncovered it and thus showed that he had killed the wolves. All the animals tried to kill him, but were unable to do so. I shall give the full legend later on. Mink, whose quē'qutsa name is K·ēx·, thus obtained the wolf's name, Nūn, as a member of the seal society, and also the wolf's Lō'koala or supernatural power. This tradition belongs to the clan

Fig. 120.
MASK OF NŪ'LMAL.
Height, 12 inches; white, black, red.
IV A, No. 1338, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

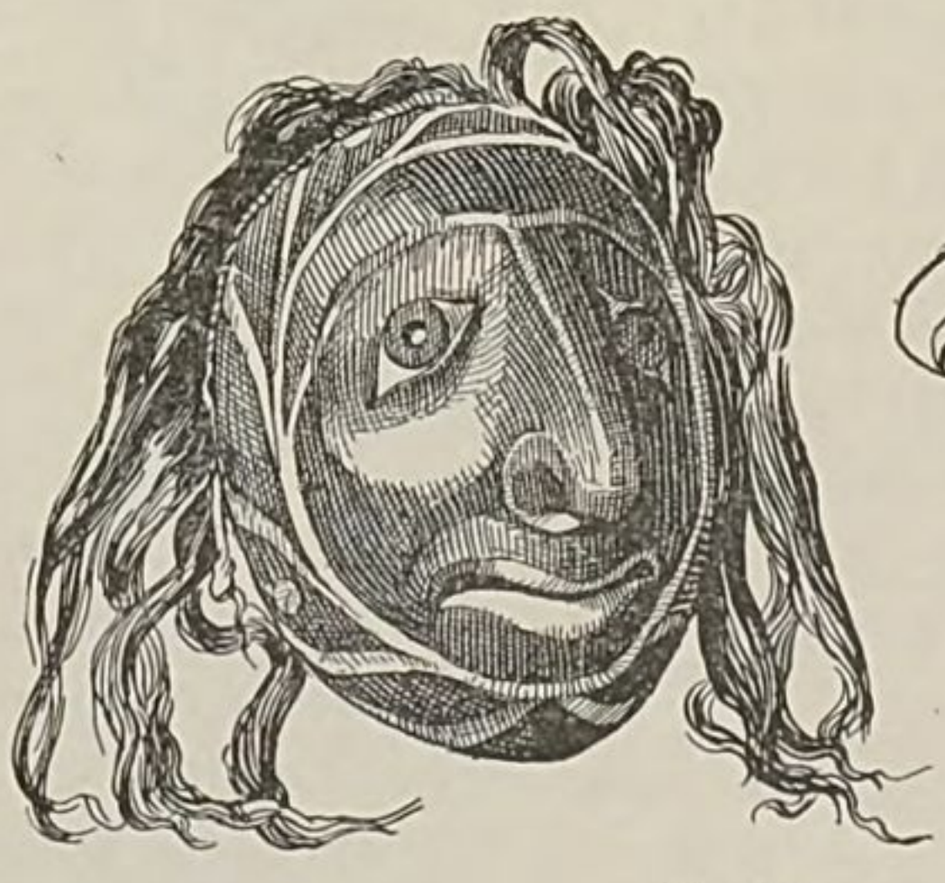
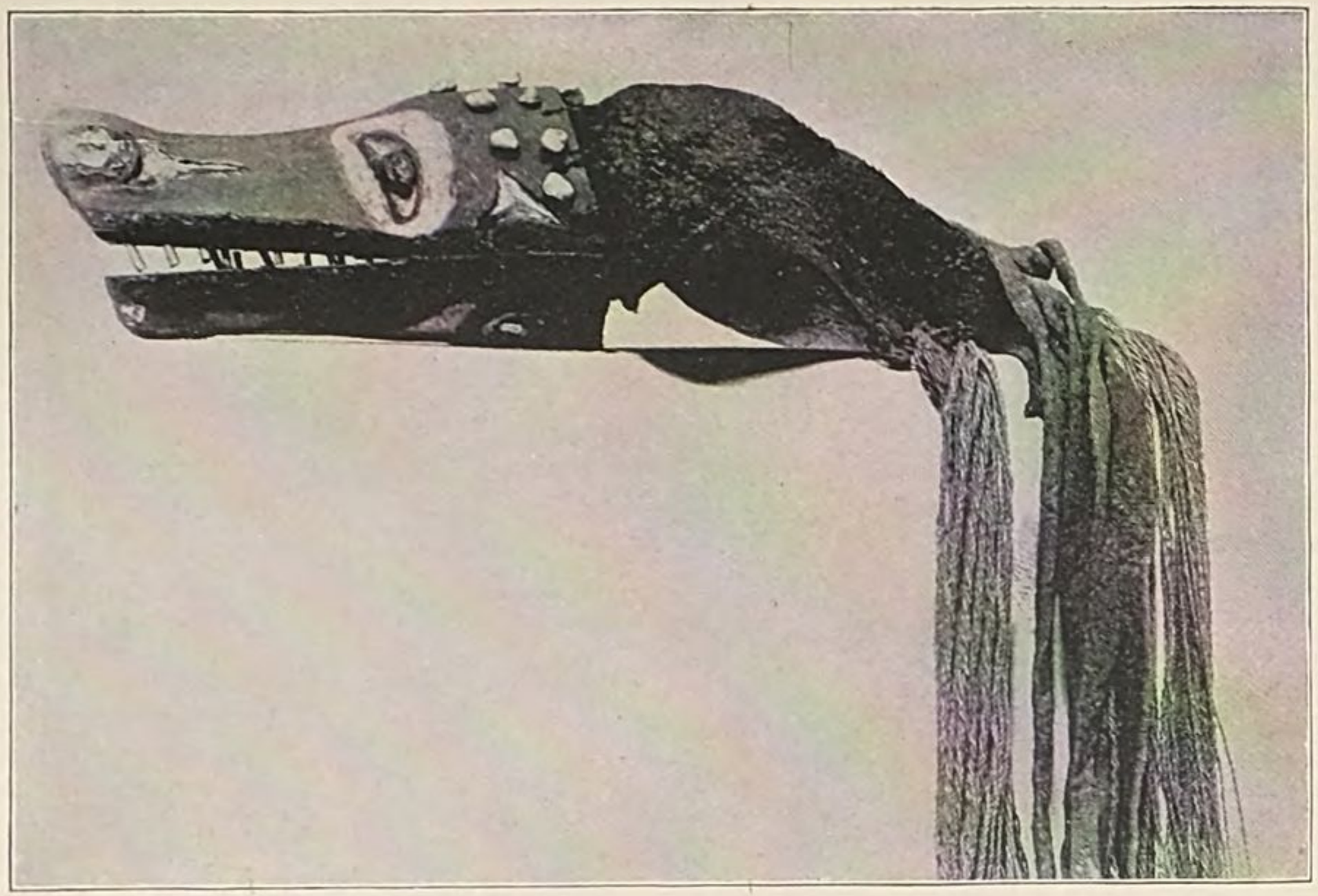


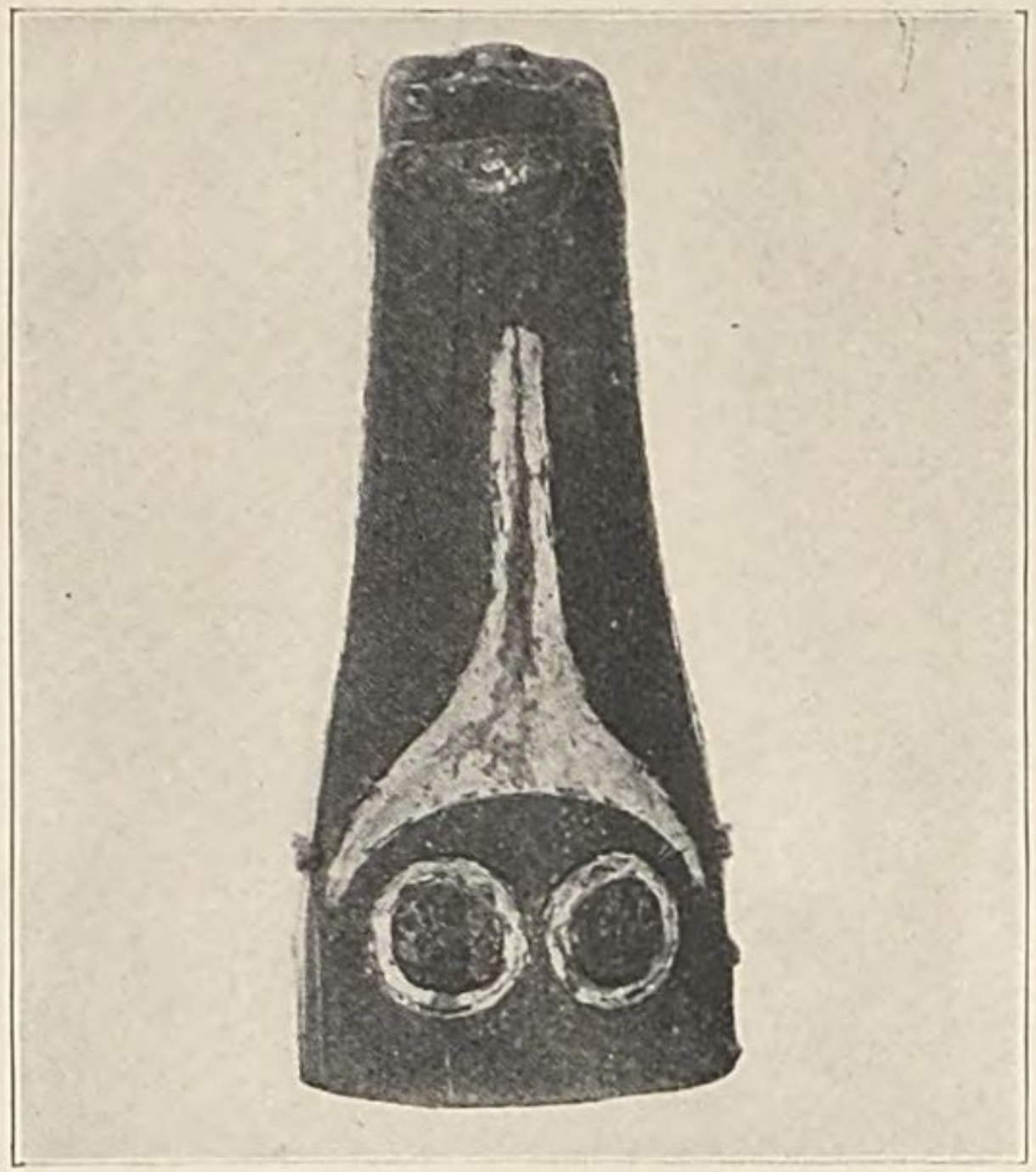
Fig. 121.
MASK OF NŪ'LMAL.
Height, 11¾ inches; black, white, red.
IV A, No. 1292, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

Fig. 122.
MASK OF NŪ'LMAL.
From a sketch made at the World's Columbian Exposition.

La'alaxsent'aiō, and K·ēx· and Nūn are the two names of the Lō'koala dancer. When he appears as quē'qutsa, he wears the frontlet (x·isī'waē) representing the wolf, nūnqEmL or Lō'koalaqEmL (fig. 140, p. 493). His



a. Side view.



b. View from below.

WOLF MASK.

British Museum. Collected by Captain Cook.

song is intended to excite the nōō′nLEmaLa, who are considered as the friends of the wolf chiefs whom K·ēx· had killed. They are excited by the mention of the words "middle of the face," i. e., nose, in the following song:

Mink put on his head the middle of the face of Nōlt'a-qālag·ilîs.[1]

Before singing, the dancer goes three times around the fire, covering his head with his blanket. Then he unfolds it. He wears the headdress. His cheeks are each painted with a black circle, the inside of which is red. He puts his hands flat to his nose (both in the medial line, one close to the other), dances, and sings the preceding song. Then the nōō′nLEmaLa all try to attack him while the quē′qutsa protect him.

Fig. 123.

MASK OF NŪ′LMAL.

IV A, No. 524, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

TS'Ō′NOQOA.

Although the Ts'ō′noqoa is not an animal, but a fabulous being, as described before, this seems the most appropriate place to mention her dance and songs. She is a member of the seal society. She is represented as always asleep. When the dancer enters the house, a rope is stretched from the door to her seat, along which she feels her way. She does not dance, but walks once around the fire, attired in the complete skin of a bear, which fits over her body and to which her mask is attached. Figs. 13, 141–144 (pp. 372, 494–496) represent a series of typical Ts'ō′noqoa masks. The last one was obtained from the La′-Lasiqoala. Her song is as follows:[2]

Fig. 124.

HEAD MASK OF NĀ′NAQAUALIL, SET WITH BIRD SKINS.

(Scale $\frac{1}{8}$.)

IV A, No. 566, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

1. I was a little too late to witness the blood of his victims, to see the putrid heap of those whom he had killed, to see the remains of the food of the warrior of the world.
2. He was made great; he was made wild by his father.[3] He will not take pity. He will kill. He comes to make poor the tribes.

Fig. 125.

HEAD MASK OF NĀ′NAQAUALIL, SET WITH BIRD SKINS.

From a sketch made at the World's Columbian Exposition.

[1] This is the name of a nū′LmaL. The name of the person who is to be excited is inserted here. See Appendix, page 712.

[2] Appendix, page 713.

[3] When his father caused him to be initiated.

Following is another Ts'ō'noqoa song of the Kwakiutl:[1]

1. She is the great Ts'ō'noqoa who is trying to carry men on her arms, who is causing nightmare, who is making us faint.
2. Great bringer of nightmares! Great one who makes us faint! Terrible Ts'ō'noqoa

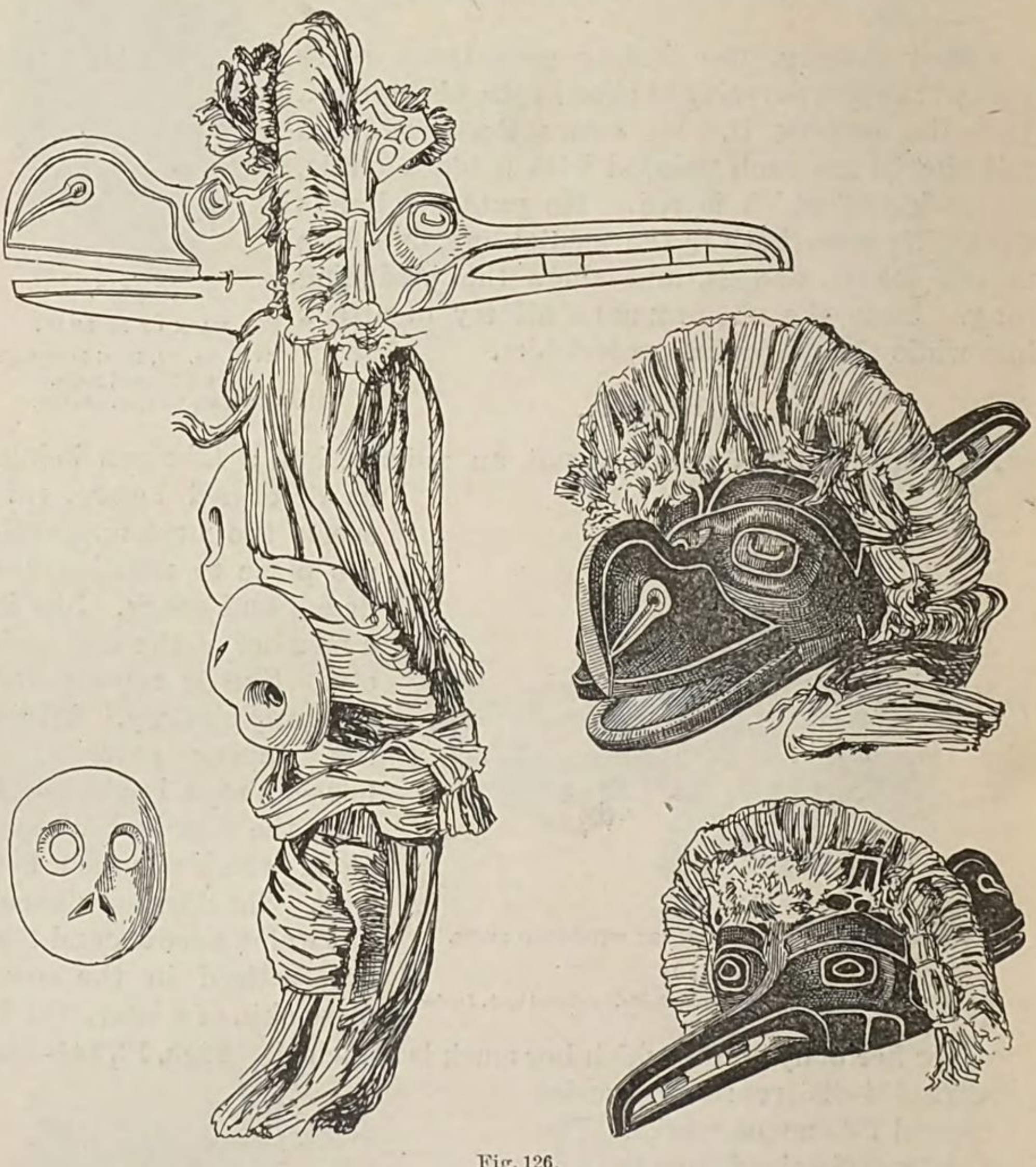


Fig. 126.

HEAD MASK OF NĀ'NAQAUALIL.

Length, 27½ inches; black, white, red.

IV A, No. 1244, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

IA'K·ÎM.

The Ia'k·îm (badness) is a water monster which obstructs rivers, and endangers lakes and the sea, and swallows and upsets canoes. I did not learn any details in regard to its dance. The Ia'k·îm appears also on ha'mshamtsEs mask, for instance on the mask shown in fig. 102, p. 467. The form in which it is represented is quite variable because all sea monsters are called by this term. Fig. 102 is the wide mouthed mon-

ster ts'ē'gîc which destroyed whole tribes. In other legends monsters are described which are called "sea bears," "monster herrings," and

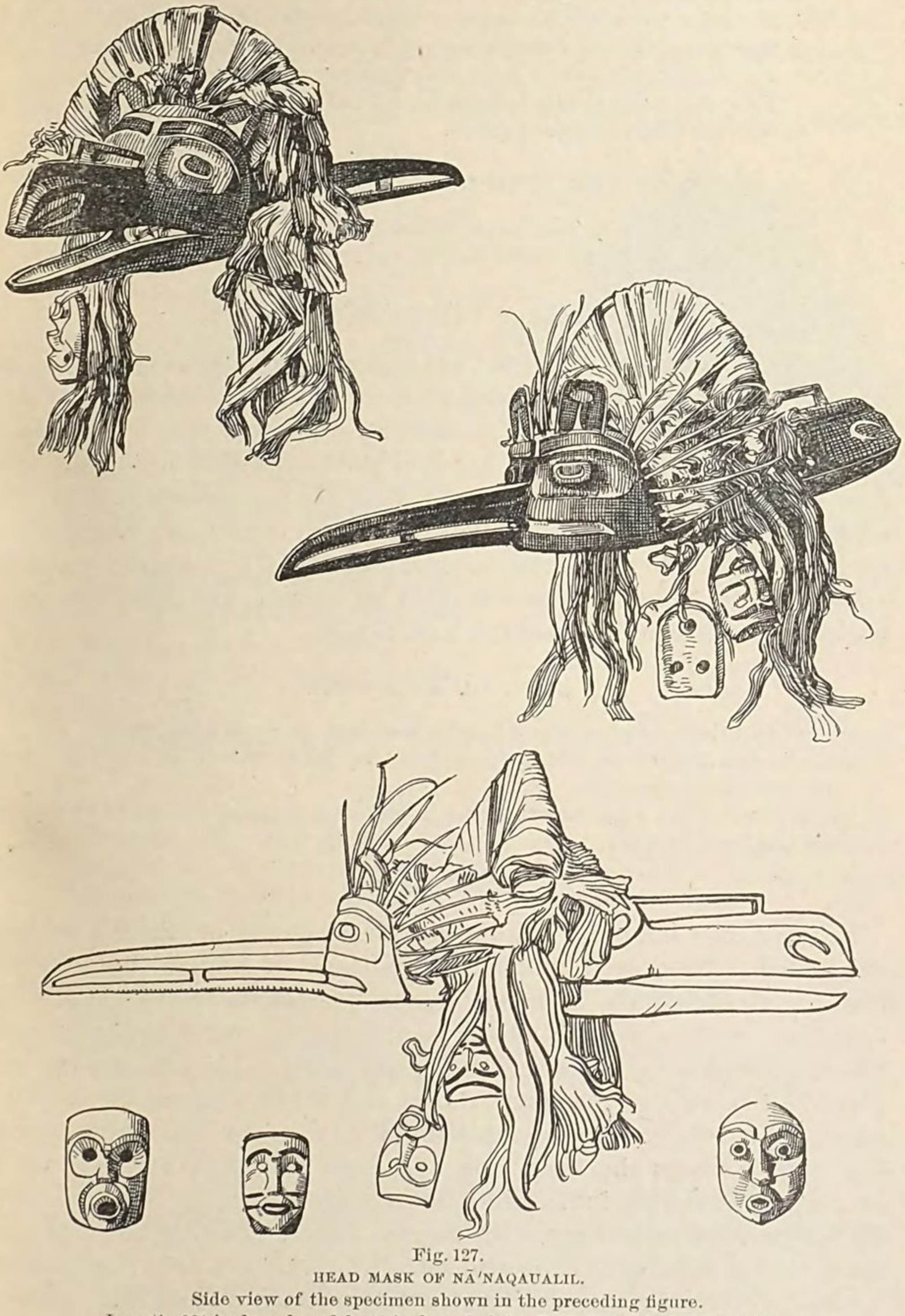


Fig. 127.

HEAD MASK OF NĀ'NAQAUALIL.

Side view of the specimen shown in the preceding figure.

Length, 32½ inches; breadth, 8¼ inches; height, 7½ inches; black, red, white.

IV A, No. 1245, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

many others. Fig. 145 (p. 496) represents the mask of the Ia'k·îm. Its song, which was obtained from the La'Lasiqoala,[1] is given on p. 482.

[1] Appendix, page 713.

SONG OF THE IA'K·ÎM.

1. The great Ia'k·îm will rise from below.
2. He makes the sea boil, the great Ia'k·îm. We are afraid.
3. He will upheave the seas, the great Ia'k·îm. We shall be afraid.
4. He will throw blankets from out of the sea, the great Ia'k·îm.
5. He will distribute blankets among all tribes, the great Ia'k·îm.
6. We fear him, the great Ia'k·îm.

SONG OF THE SĪ'SIUL DANCE, LA'LASIQOALA.[1]

1. Great is the sī'siuL dance of our chief.
2. They say by his dance he will cut in two a whole tribe.[2]

AŌ'MALAL, OR CHIEFTAINESS DANCE.

I did not see the dance and do not know any details as regards initiation, etc. I received the following description: The Aō'malaL is said to sit on a stage in front of the mā'wiL. She has the chieftainess's ornaments of abalone shells in her ears and attached to her nose. She does not move, but is merely shown behind the curtain while the people sing her song.[1] It is probable that this dance is a recent introduction from the north. In the winter ceremonial of the Tsimsshian the dancer appears in the manner here described on a stage, and after the song the stage is hidden again behind a curtain.

SONG OF AO'MALAL.

1. We are told that our great chief lets his daughter dance as chieftainess.
2. Great is the song of the chieftainess, great is the hā'mats'a song of the supernatural chieftainess.
3. At the place of the great supernatural chieftainess is heard the sound of copper, the ringing of copper.

GHOST DANCE.

I stated in Chapter VI[3] how the ghost dance of the L'ā'sq'ēnôx originated. There are a number of traditions of similar character explaining the origin of the ceremony among various tribes. All these traditions contain descriptions of a visit to the world of the ghosts, which is believed to be located under our world. Then the visitor was given the secrets of the ghost dance and other magical gifts. This dance is a mimical representation of a visit to the lower world. The dancer wears the head ring and neck ring, figs. 146, 147[4] which are set with skulls, indicating that the ghosts have initiated him. Elaborate preparations are made for this dance. During the days preceding it the members of the seal society hold close watch that nobody enters the dancing house in which they remain assembled. Then a ditch is dug behind the fire, and speaking tubes made of kelp are laid under the floor of the house so as to terminate in the fire. The ghost dancer appears, led by a rope by one attendant. He goes around the fire four times, summoning the ghosts. After he has made the fourth

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[1] Appendix, page 713. [2] He will destroy them. [3] Page 408. [4] Page 497.

circuit he slowly disappears in the ditch near the fire. The people try to hold him by the rope, but apparently he sinks out of reach. Then many voices are heard coming from out of the fire—actually the voices of people hidden in the bedrooms who speak through the kelp tubes. It is announced that the ghosts have taken the dancer away, who will return after a certain number of days. When the time of his return is at hand, another dance is held. A carving representing a ghost is seen to rise from out of the ground carrying the dancer.

SONG OF THE GHOST DANCER.[1]

1. I went down to the under world with the chief of the ghosts. Therefore I have supernatural power.
2. The chief of the ghosts made me dance. Therefore I have supernatural power.
3. He put a beautiful ornament on to my forehead. Therefore I have supernatural power.

The ghost dancer of the La′Lasiqoala wears a head ring set with four feathers and a thick veil of cedar bark falling over his face (fig. 148, p. 501).

I have two of his songs:

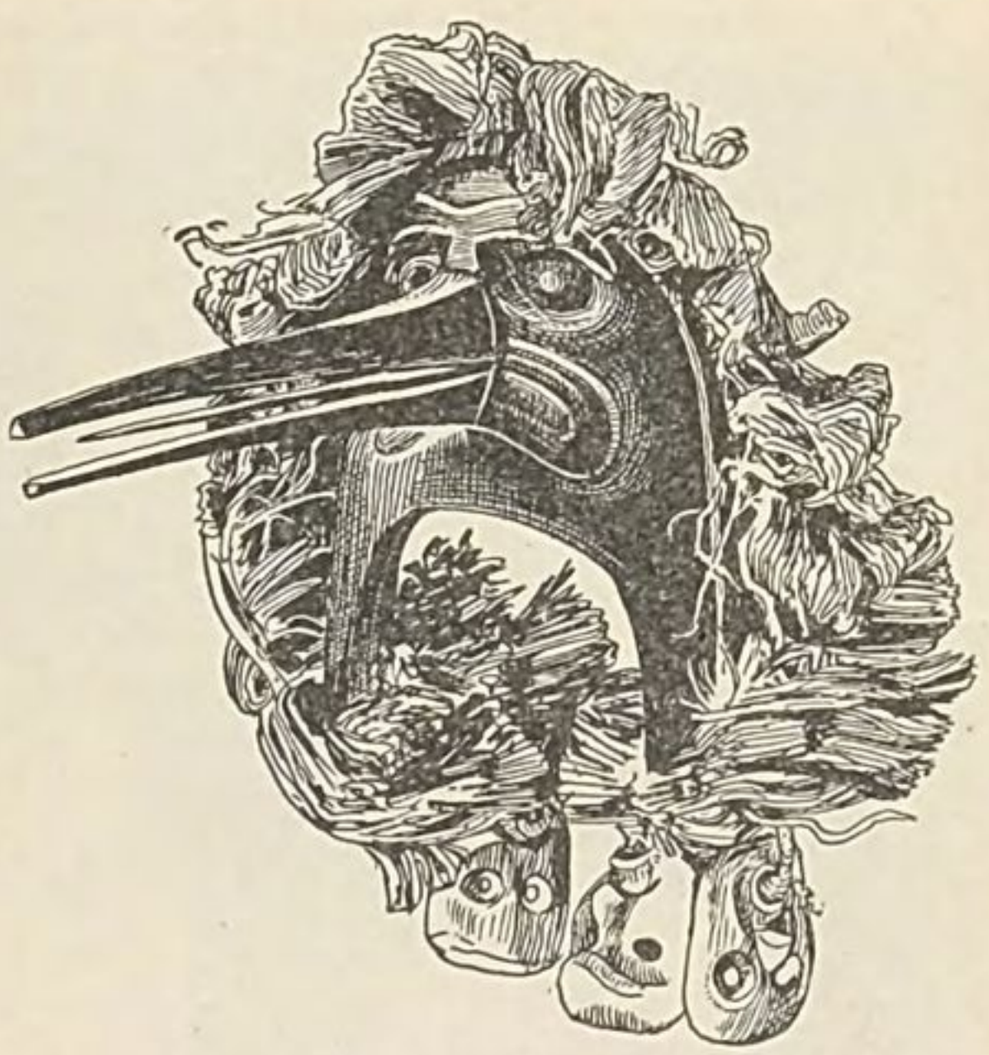


Fig. 128.

HEAD MASK OF NĀ′NAQAUALIL, REPRESENTING THE HŌ′XHOKᵚ

Length, 19 inches; black, white, red.

IV A, No. 1330, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

I.

1. I came to see you. Why are you making an uproar, ghosts? you who take away man's reason. You are coming up from the sea and call our names in order to take our senses, you famous ones who take away man's reason.[1]

II.

1. You sent us everything from out of the under world, ghosts! who take away man's senses.
2. You heard that we were hungry, ghosts! who take away man's senses.
3. We shall receive plenty from you, ghosts! who take away man's senses.[1]

MĀ′TEM.

I have told the legend of the Mā′tEm in the preceding chapter.[2] The dancer, when his song is sung, appears first on the roof of the house, perfectly naked. Five pieces of wood, which are covered with mica and cut in the form of hexagonal prisms in the shape of quartz crytals, are fastened along the medial line of his head. They are attached to a thin wooden frame, which is shaped according to the curvature of the head and hidden in the hair. The frame consists of a medial piece which is attached to a ring and held by two crosspieces. All of these

[1] Appendix, page 714.

[2] Page 411.

are given their proper shape by means of steaming. As the song proceeds, the dancer jumps down from the roof to the top of the bedrooms in the rear of the house, and from there to the floor. He holds his hands close to the back of his thighs and runs with short steps around the fire.

Here is a song of Mā'tEm.

1. I was taken to the foot of the quartz mountain.
2. I was taken to the foot of the mountain from where the quartz came rolling down to me.
3. It flew with me and took me to the end of the world, the cloud, the child of Mā'tEm.

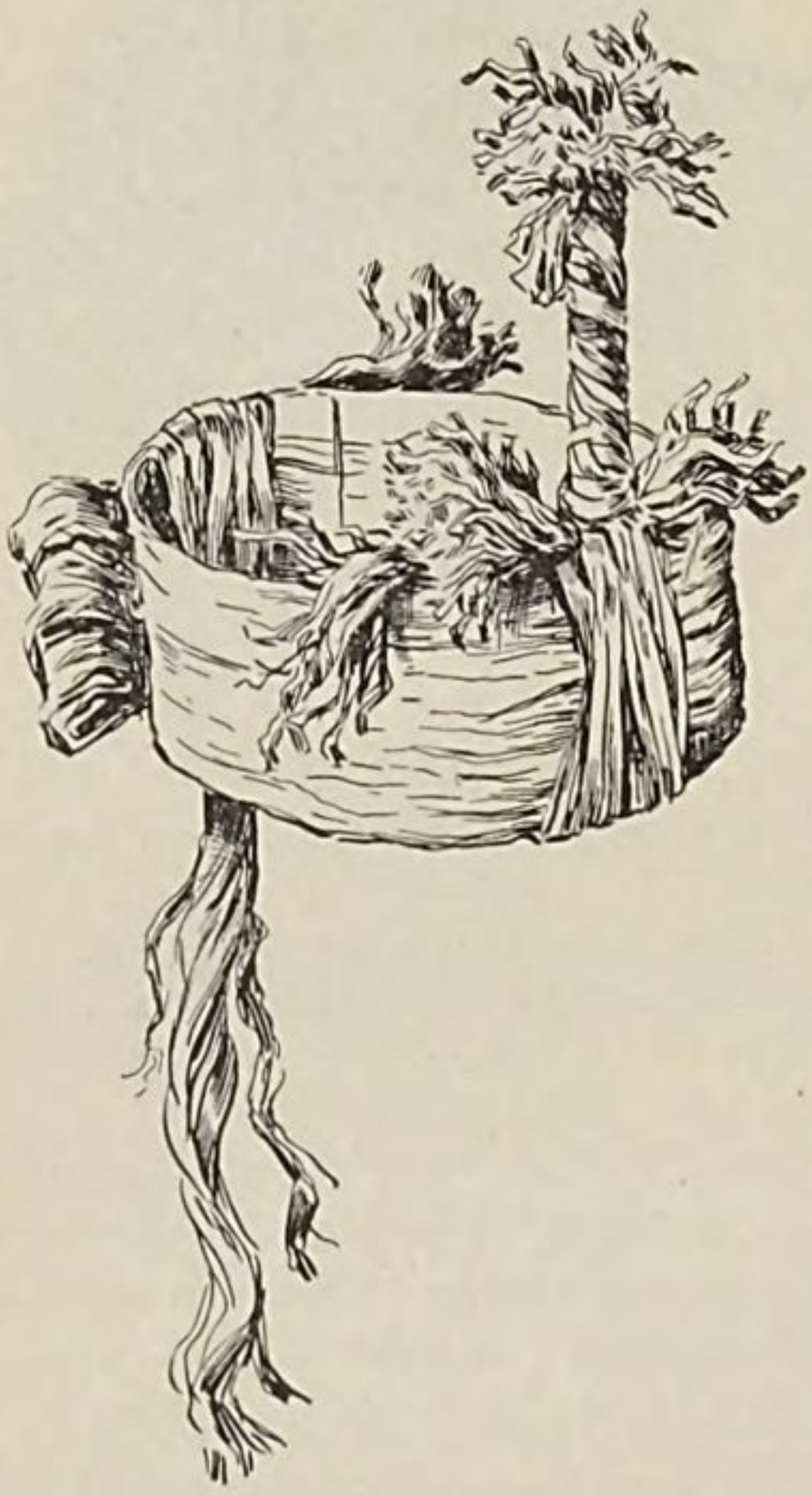


Fig. 129.

FIRST HEAD RING OF NĒNALAATS'ĒQA.
Koskimo.

Cat. No. 175494, U. S. N. M. Collected by F. Boas.

The following song of the clan Ts'ē'ts'ēLoālaqamē, the origin of which is derived from a tradition, is said to refer partly to Mā'tEm, although the connection has not become clear to me.

1. I will tell about olden times. Long ago Wīna'lag·ilîs took me to see the thing upon which he was blowing water.
2. Therefore I tell with a loud voice: Long ago Wīna'lag·ilîs took me to see the thing upon which he was blowing water.

NA'XNAK·AQEML AND MĒ'ILA.

Two dances derive their origin from the heavens,—the Na'xnak·aqEmL and Mē'iLa. I have already told the legend of both (p. 413). The Mē'iLa dance and the ornaments of the dancer are shown in Plate 38 and fig. 149 (p. 501). His club (kuē'xayu), the gift which he received in heaven, represents the sī'siuL. His cedar bark ornament is made of red and white cedar bark. The large flat attachments in front represent the Pleiades. He carries in place of a rattle a small clapper (fig. 150, p. 502).

The Na'xnak·aqEmL wears an immense mask, the mouth of which is made so that it can open wide. Therefore it is also called hā'x·ilaqam (the yawning face). The opening mouth means that the day is yawning when the dawn appears. A mask of this kind was among the collections at the World's Columbian Exposition, and has been transferred to the Field Columbian Museum. The song belonging to this mask is as follows:[1]

1. You will arise, you who you are known all through the world.
2. You will arise, you who you are famous all through the world.
3. You will arise; before you sinks down your rival.
4. It is said that I buy food for my feast even from my rival.

[1] Appendix, page 714.

DANCE OF ME'ILA.
From a photograph.

The opening phrase of this song means that the dancer for whom the words of this song were modified had taken the place of her deceased brother, who, therefore, in her had resurrected.

Finally, I will describe the dances instituted by Wīnā′lag·ilîs, namely the mā′maq'a, t'ō′X'uît, hawī′nalaL, and ā″mlala. All of these wear ornaments of hemlock; no red cedar bark. They are all considered war dances.

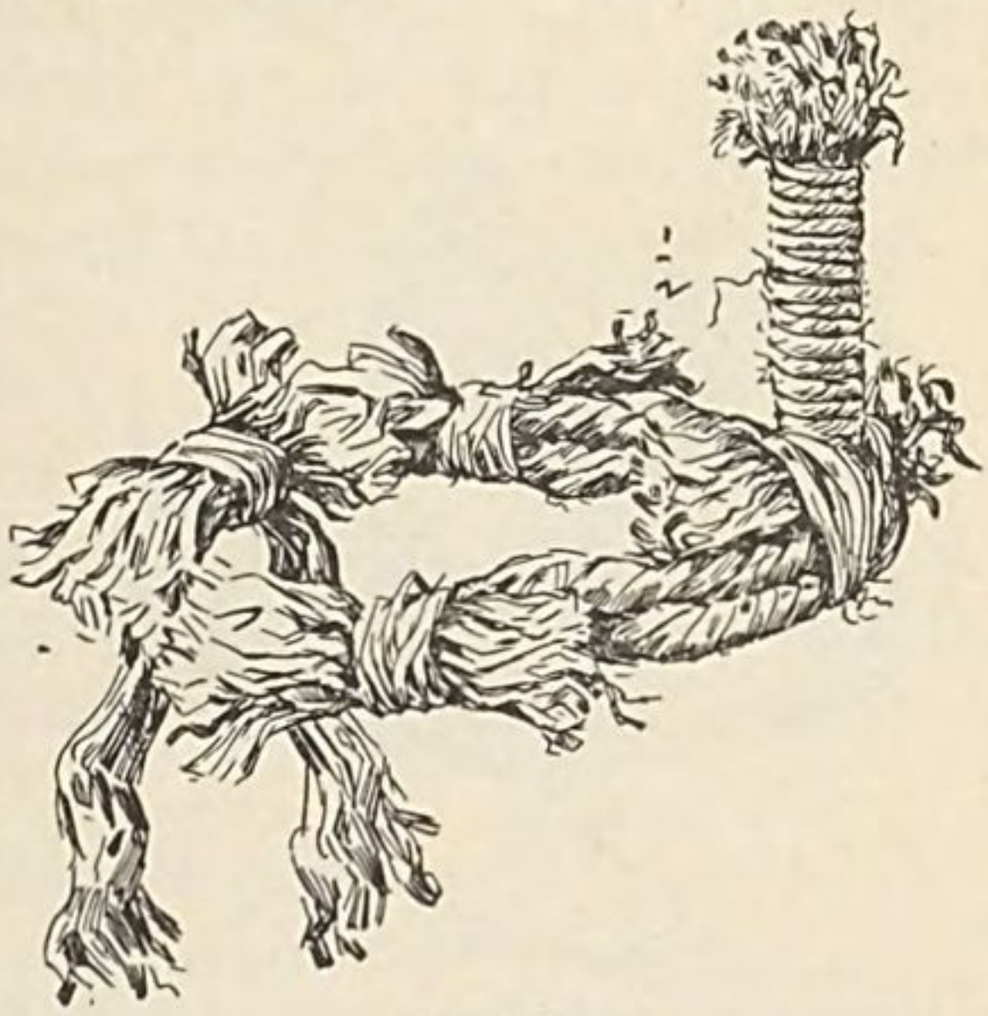


Fig. 130.

SECOND HEAD RING OF NĒNALAATS'ĒQA.

Koskimo.

Cat. No. 175496, U. S. N. M. Collected by F. Boas.

MĀ′MAQ'A.

The mā′maq'a, or thrower, performs a dance in which he is supposed to throw disease into the people. He enters the house naked except for a head ring, neck ring, waistband, bracelets, and anklets of hemlock. His hands are laid flat to his haunches. Thus he runs with short, quick steps around the fire, looking upward with sudden movements of his head, first to the right, then to the left. When doing so, he is looking for his supernatural power to come to him. All of a sudden he claps his hands together and holds the palms flat one to the other. Thus he moves his hands somewhat like a swimmer, up and then in a long circle forward, downward, and, drawing them close to his body, up again. Now he is holding his supernatural power, "the worm of the mā′maq'a," between his palms. During all this time he is continuing his circuit in short, quick steps, but he no longer looks upward. Gradually he takes his palms apart, and between them is seen the "mā′maq'a's worm." This is either a small carved sī′siuL, or snake, or it is a stick which is covered with bark. The stick consists of several tubes which fit into each other, so that the dancer can lengthen and shorten it. While the worm is thus seen to increase and decrease in size, the mā′maq'a resumes his motions of throwing, moving the closed palms in circles, as described above. Suddenly he seems to throw the implement which he is holding. At once all the people stoop and hide under their blankets. The implement has disappeared. He repeats the performance. The second time when he throws the worm, it is

Fig. 131.

MASK OF NĒNALAATS'ĒQA.

Length of face, 10¼ inches.

Cat. No. 175497, U. S. N. M. Collected by F. Boas.

seen to fly in the air. Actually there is a second one of the same shape as the implement that was seen in the mā′maq'a's hands. This is attached to a long string, which is stretched across the rear of the house where the seal society are sitting. Two men are holding the string, one on each side of the house, and hidden in the bedrooms. By pulling the rope and tightening and slackening it the worm is seen to fly up and down and from the right to the left. While it is flying there the mā′maq'a moves to the right and to the left in front of it, his hands stretched forward, the palms upward, the elbows to the side, always moving with short, quick steps. Finally the flying worm disappears and the mā′maq'a catches it again. Then he resumes his motions of throwing and finally seems to throw it into himself. He almost collapses, and tries to rid himself of the disease-bringing object by vomiting. Blood is seen to flow from his mouth and down his whole body. This is sometimes procured by biting the inside of the cheek or by breaking a small bladder containing blood which the dancer holds in his mouth. After prolonged efforts he vomits the worm. At once he is hale and well and proceeds in his dance. Now he throws the fourth time. The worm flies into some of the people, who at once jump up and rush toward the fire, where they fall down lifeless. Blood is streaming out of their mouths. The mā′maq'a continues to dance around them, blows upon them until finally they are carried away like dead. The mā′maq'a follows them and either he or the shaman restores them to life. During all this ceremony the singers beat the boards rapidly and silently, only stopping when the mā′maq'a does not dance. His song is sung after he has finished his dance. At the close of the dancing season the mā′maq'a indemnifies his victims by the payment of a few blankets.

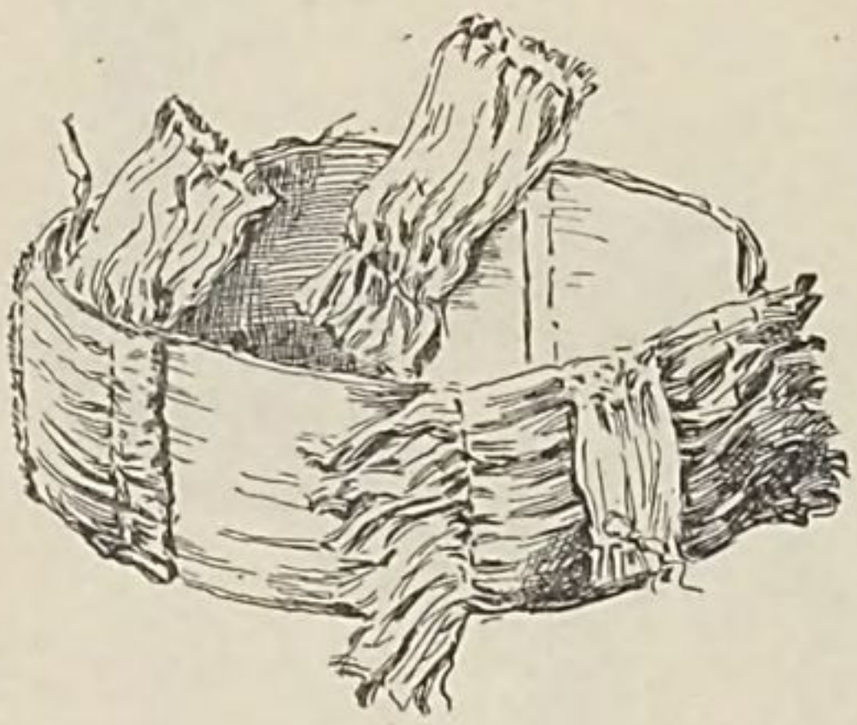


Fig. 132.

HEAD RING OF SPEAKER OF NĒNALAATS'ĒQA.
Koskimo.

Cat. No. 175509, U. S. N. M. Collected by F. Boas.

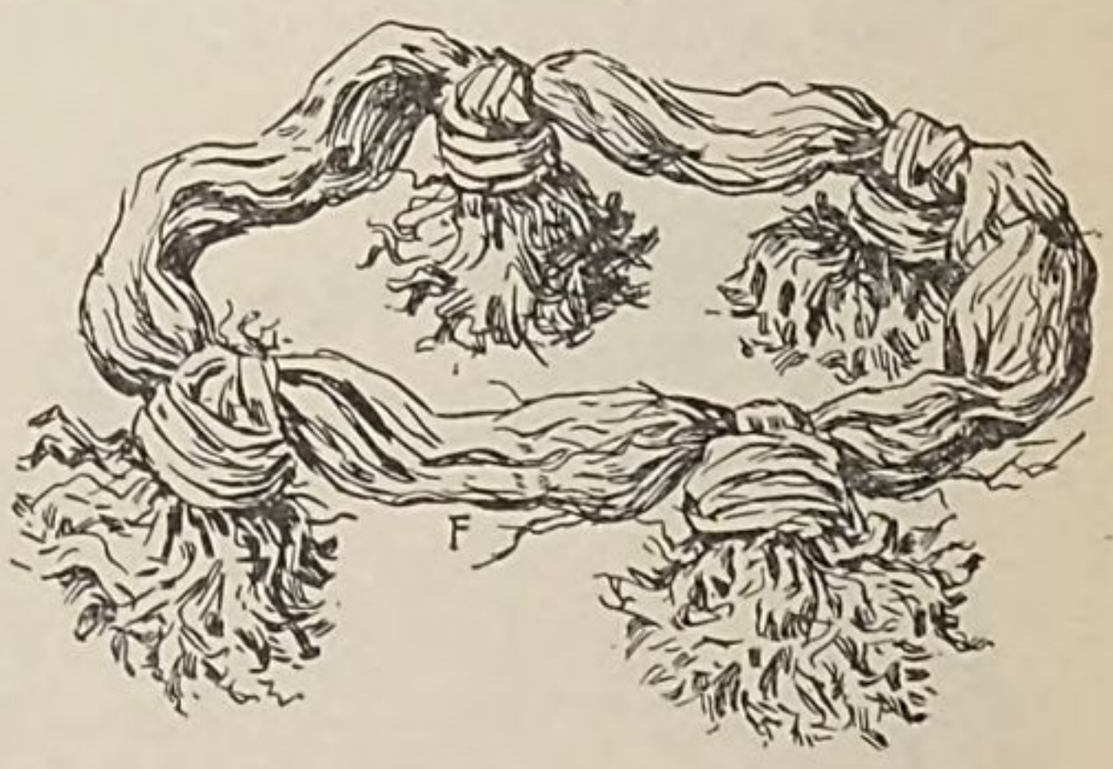


Fig. 133.

NECK RING OF NĒNALAATS'ĒQA.
Koskimo.

Cat. No. 175495, U. S. N. M. Collected by F. Boas.

Sometimes instead of throwing the disease, he throws a harpoon head. There are also two of these used in the ceremony. One is held and shown by the mā′maq'a. It is a real point of a sealing harpoon. The other has no blade, but is provided with two hooks to hook it to the

skin. The person with whom the mā′maq'a has an understanding, hooks this second harpoon head to his skin and opens at the same time a small bag containing blood, which seems to flow from the wound. Later on the mā′maq'a pulls it out and exchanges it quickly for his own harpoon head.

There are still other performances of the mā′maq'a, one of which consists in throwing a number of ducks into a kettle that is filled with water. I am told that wooden carved ducks are tied to the bottom of the kettle and released by a helper as soon as the mā′maq'a throws.

MĀ′MAQ'A SONG.[1]

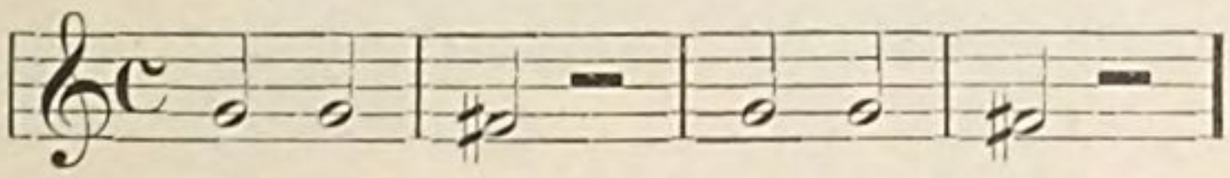
1. Go and look everywhere for his supernatural power, for his supernatural power.

Among the La′Lasiqoala the mā′maq'a wears cedar bark ornaments as shown in figures 151, 152, pp. 502, 503. His dance is the same as that of the Kwakiutl ma′maq'a. Following is one of their mā′maq'a songs:[1]

1. Behold his great supernatural power; iä.
2. Be careful in swinging your sacred implement.
3. Truly it kills the people, so that they have no time to escape.
4. Truly the supernatural power cuts short their lives.

T'Ō′X'UÎT.

The t'ō′X'uît is almost always danced by women. The dancer is decorated in the same way as the mā′maq'a. She enters singing the t'ō′X'uît cry:



She holds her elbows close to her sides, the forearms forward, palms upward. She walks around the fire limping, raising both hands slightly with every second step, as though she was trying to conjure something up from underground. She is followed by four attendants. Her spirit is in most cases the sī′siuL, and him she is conjuring. She moves around the fire four times, and now the ground opens in the rear of the house and out comes a huge sī′siuL. Its horns are moving and its tongues are playing. This carving is either raised by means of strings which pass over the beams of the house or by men who lift it from underneath. A carving of this sort was exhibited at the World's Columbian Exposition, and has been transferred to the Field Columbian Museum. As soon as it appears there is a great commotion in the rear of the house so that it can not be seen very distinctly. After it has disappeared again the singers begin its song, which is as follows:[1]

1. Let us show what we gained by war!
2. (Wīnā′lag·ilis says:) I did not turn my face backward to look at those who were bothering me when I went to make war on you, friend.

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[1] Appendix, page 715.

3. Throw your power that is killing everybody, throw your fire of death, throw what makes them turn their faces downward, throw it against them who went to make war upon you.
4. I surpass them, they are the lowest of the whole world.
5. I pulled them into my canoe to be my slaves, that they may bail out the war canoe.[1]

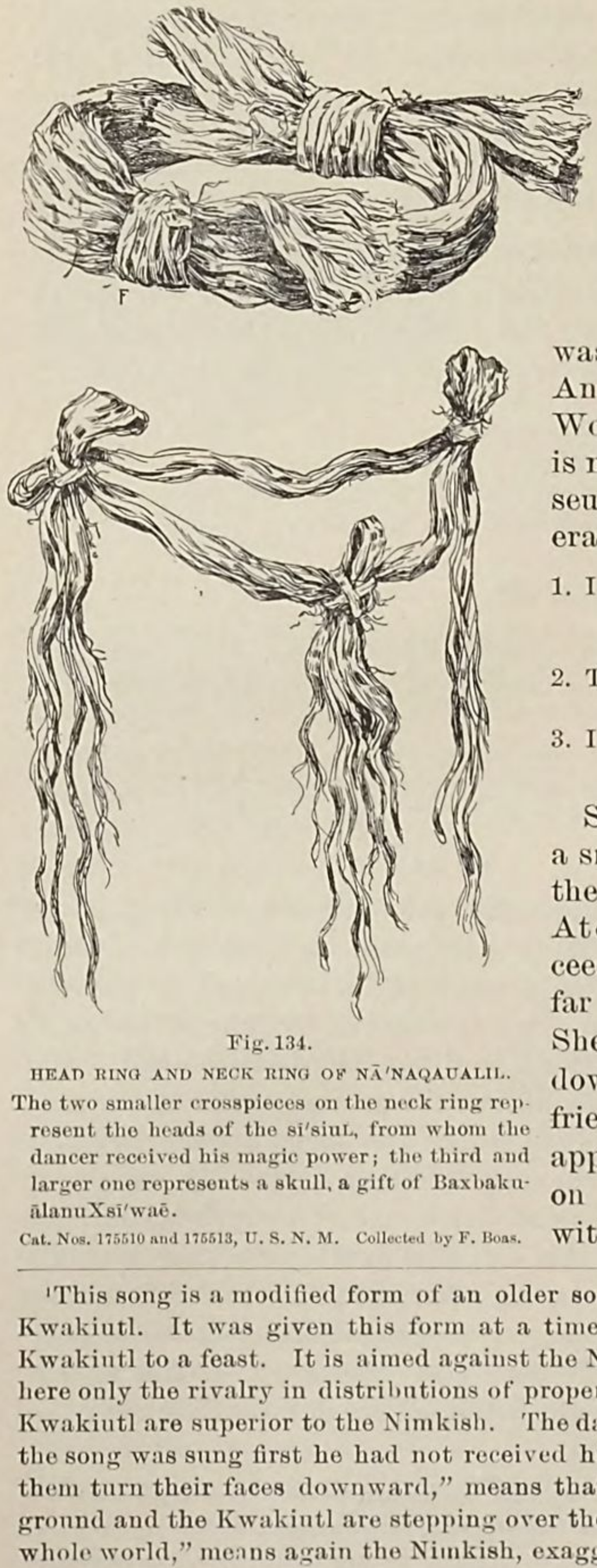


Fig. 134.

HEAD RING AND NECK RING OF NĀ'NAQAUALILL.

The two smaller crosspieces on the neck ring represent the heads of the sī'siuL, from whom the dancer received his magic power; the third and larger one represents a skull, a gift of Baxbakuālanuxsī'waē.

Cat. Nos. 175510 and 175513, U. S. N. M. Collected by F. Boas.

Another t'ō'X'uît will take a stick, a lance, or a paddle, and, after having conjured up the sī'siuL, split it in two. This is done with a smaller carving, which consists of two parts that can be separated and joined again by means of strings. A sī'siuL of this kind was collected by Mr. Hunt for the Anthropological Department of the World's Columbian Exposition, and is now in the Field Columbian Museum. Its song, which is four generations old, is as follows:[2]

1. I have been on the other side of the world, I, the great supernatural being.
2. There I obtained all the supernatural power.
3. I bring with me all the supernatural power.

Still other t'ō'X'uît will conjure up a small sī'siuL, which flies through the air like that of the mā'maq'a. At other times the t'ō'X'uît will succeed in bringing the sī'siuL up just far enough for its horns to show. She tries to grasp it and it takes her down to the under world. Then her friends try to hold her, but she disappears. H[illegible]dant, who holds on to her, sinks into the ground with his forearms and seems to

[1] This song is a modified form of an older song belonging to the Sī'sînLaē of the Kwakiutl. It was given this form at a time when the Nimkish had invited the Kwakiutl to a feast. It is aimed against the Nimkish. The references to war mean here only the rivalry in distributions of property, and the song intimates that the Kwakiutl are superior to the Nimkish. The dancer is called "friend" because when the song was sung first he had not received his new name yet. In line 3, "makes them turn their faces downward," means that the Nimkish are lying flat on the ground and the Kwakiutl are stepping over their backs. Line 4, "the lowest of the whole world," means again the Nimkish, exaggerating their inferiority.

[2] Appendix, page 716.

be carried all through the house by the woman who is moving underground. He is plowing the floor with his arms. This is done by burying a stout rope about 8 inches below the surface and covering it with loose dirt. The man pulls himself along this rope (see p. 604).

Still other t'ō'X'uît invite the people to kill them. The dancer says "hup, hup," moving the edge of her palm along her throat, meaning, "Cut my neck!" or she moves the tips of the fingers of both hands down her stomach, meaning "Open my belly!" or she moves them along her head, shoulders, or other parts of her body. Finally, she is placed on a seat behind the fire and one of her attendants complies with her request. He will appear to drive a wedge through her head from one temple to the other. The wedge is first shown to the people and then secretly exchanged for another one, which consists of two parts attached to a wooden band that is slipped over her head and covered with hair. Thus it seems that the butt is standing out on one

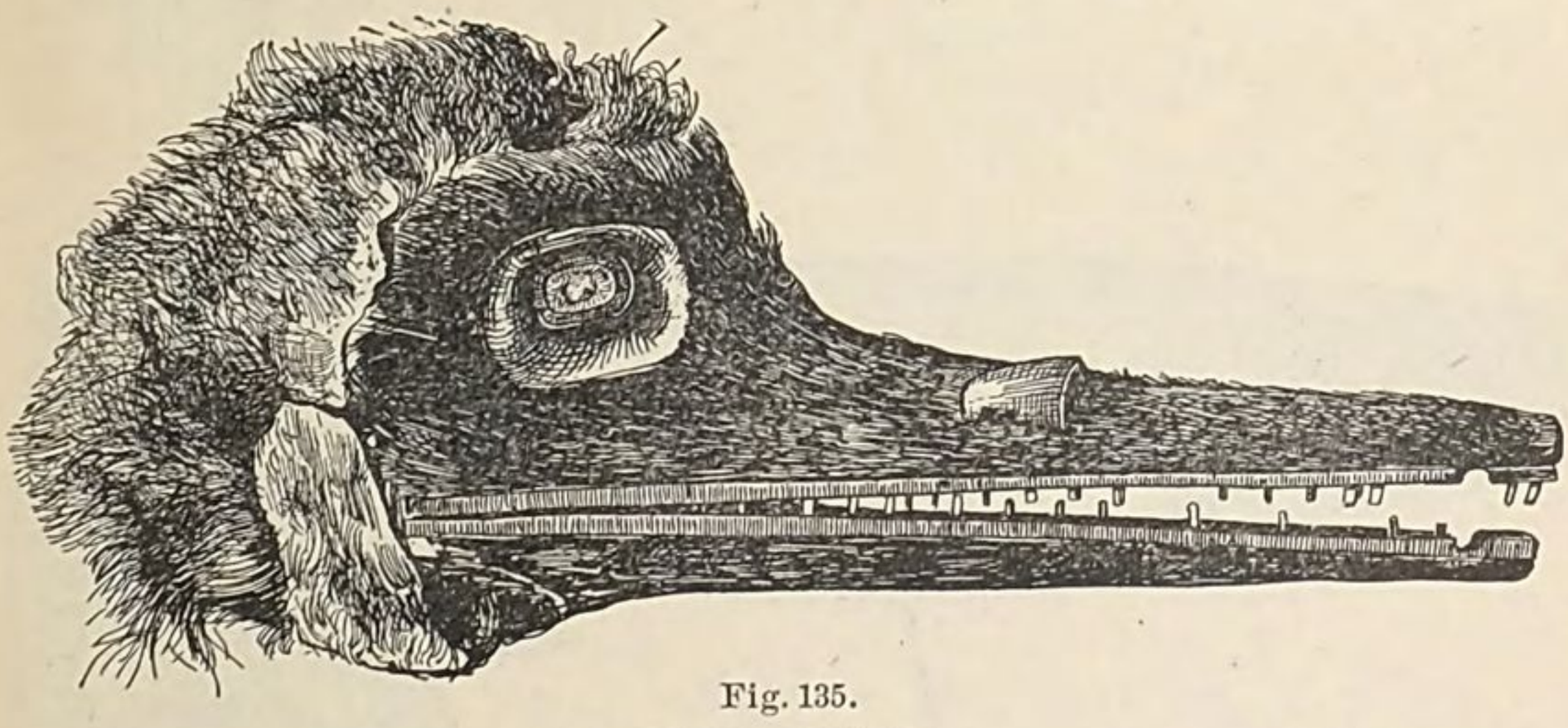


Fig. 135.

MASK OF HĀ''MAA.

Length, 31 inches.

IV A, No. 6879, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

side, the point having passed through her skull. At the same time bladders containing blood, which are attached to the band, are burst, and the blood is seen to flow down her face. She also bites her cheeks or bursts a small bag containing blood which she holds in her mouth, so that it flows out of her mouth. A pair of seal's eyes are hidden in her hair and let down over her own eyes when the wedge is driven in, so that it looks as though her eyes were coming out of their sockets. Then she rises and walks around the fire to show the wedge sticking in her head. After one circuit she is seated again, the wedge is removed, and she is hale and sound. On other occasions the head or shoulder is struck with a paddle which seems to split it, and on being withdrawn leaves a bloody line, which looks like a wound. In this case the paddle is secretly exchanged for another one which is so notched as to fit her head or shoulder. She walks around the fire showing it, and then it is removed.

Other t'ō'X'uît request their attendants to kill them with a spear.

She is seated in the rear of the house, and the spear which has been shown to the people is secretly exchanged for another one the point of which can be pushed into its shaft. The spear is put under the arm of the t'ō'X'uît, and apparently pushed slowly into her body. As it enters, blood is seen to flow from the wound. The blood is in this case also kept in a small bladder, which is attached to the skin. When it seems

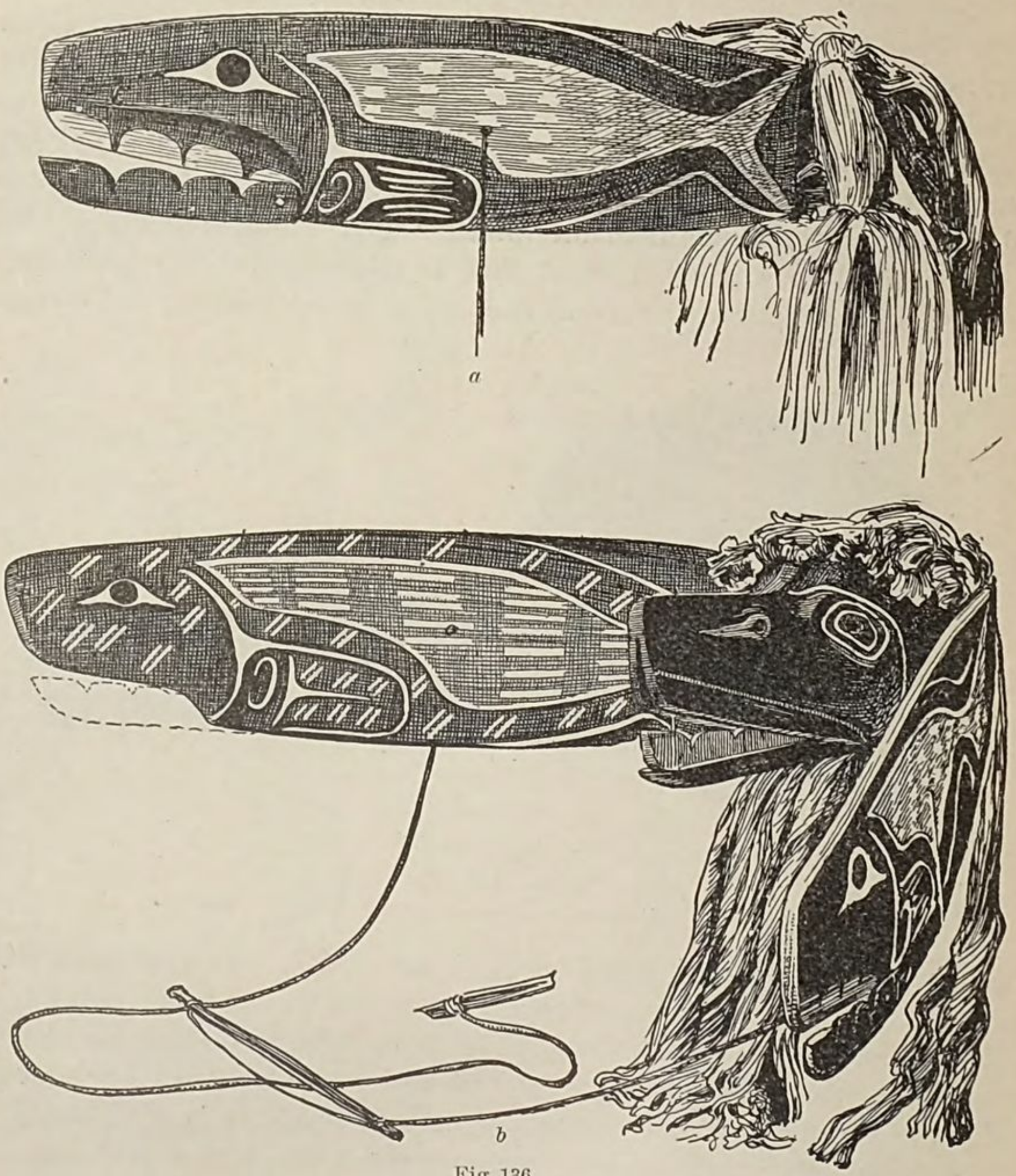


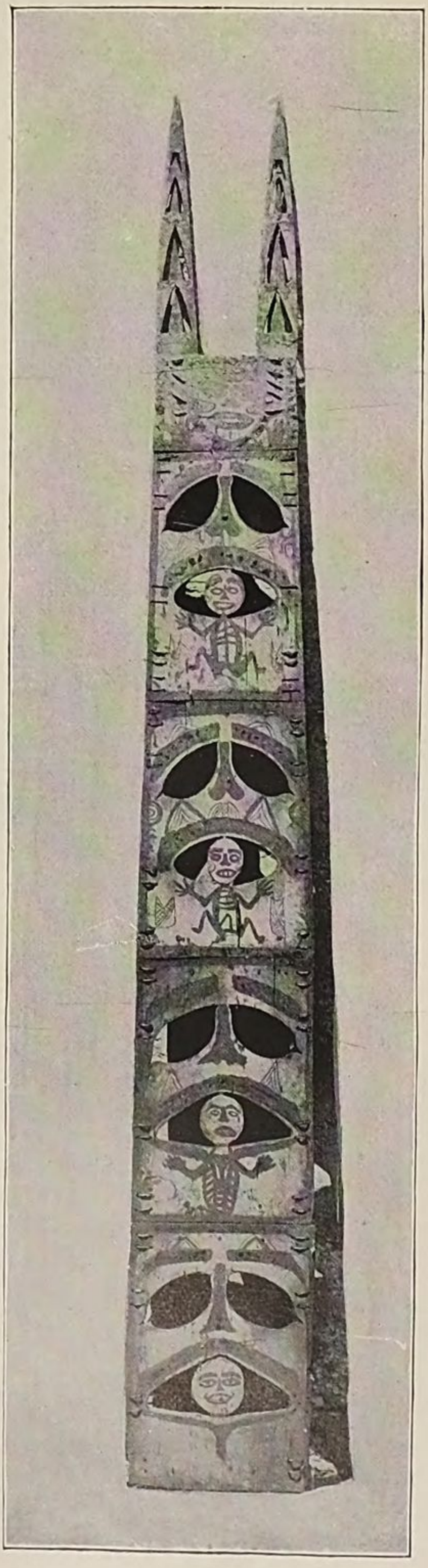
Fig. 136.

MASK OF SALMON DANCER.

The wings represent the salmon, while the inner face is that of a supernatural bird. *a*, outer view of wing; *b*, view of mask half opened. Length, 30½ inches; black, white.

IV A, No. 6881, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

to have entered the full breadth of the body, the skin on the opposite side is seen to be pushed out by the point, and blood flows also from that point. As a matter of fact, a hook which is attached to the hemlock ring on the dancer's arm is fastened to the skin, which is pulled up by a slow motion of the arm. At the same time the hook breaks a bladder containing blood.



D'E'NTSÎQ.

In some dances the head of the dancer is cut off, and the person who cuts it shows a carved human head bearing the expression of death, which he holds by its hair. These heads are as nearly portraits of the dancer as the art of the carver will permit (figs. 153, 154, pp. 503, 504).

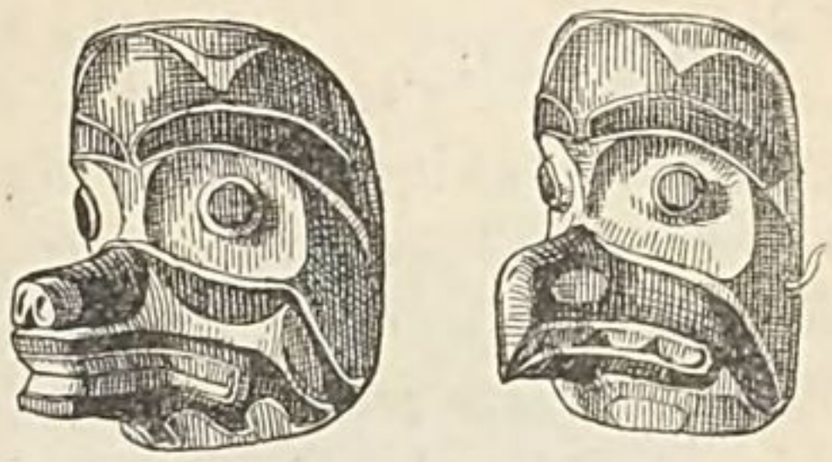


Fig. 137.

MASKS OF WASP DANCER.

Height, 6¼ inches; blue, black, red.

IV A, Nos. 422 and 423, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

Sometimes the t'ō'X'uît is burnt. A box which has a double bottom is prepared for this performance. The dancer lies down flat in the rear of the house and the box is laid down sideways, so that she may be pushed into it from behind. At the place where she is lying down a pit is dug, in which she hides, while being concealed from the view of the people by the box which stands in front of her. After the pit has been covered again, the box is raised, closed, and thrown into the fire. Before the box is brought in, a skeleton has been put between its two bottoms. While the box is burning, the song of the dancer is heard coming from the fire. From the pit in which she hides a speaking tube of kelp is laid under the floor to the fireplace, and through it she sings. When the fire has died down, the charred bones are found in the ashes. They are collected, laid on a new mat, and for four days the people sing over them. The mat is so placed that it lies over the mouth of another speaking tube. The shaman tries to resuscitate her, and after four days a voice is heard coming forth from the bones. Then they are covered with a mat. The woman crawls up from out of a ditch, into which the bones are thrown, while she lies down in their place. She begins to move, and when the mat is removed, she is seen to have returned to life. In many of these dances, after the performer has been killed, the d'E'ntsiq (Plate 39 and fig. 155)[1] arises from under ground. It consists of a series of flat, carved boards connected on their narrow sides by plugs which pass through rings of spruce root or through tubes cut out of cedar. The joints are somewhat loose, so that the whole can be given an undulating motion forward and backward. It has two

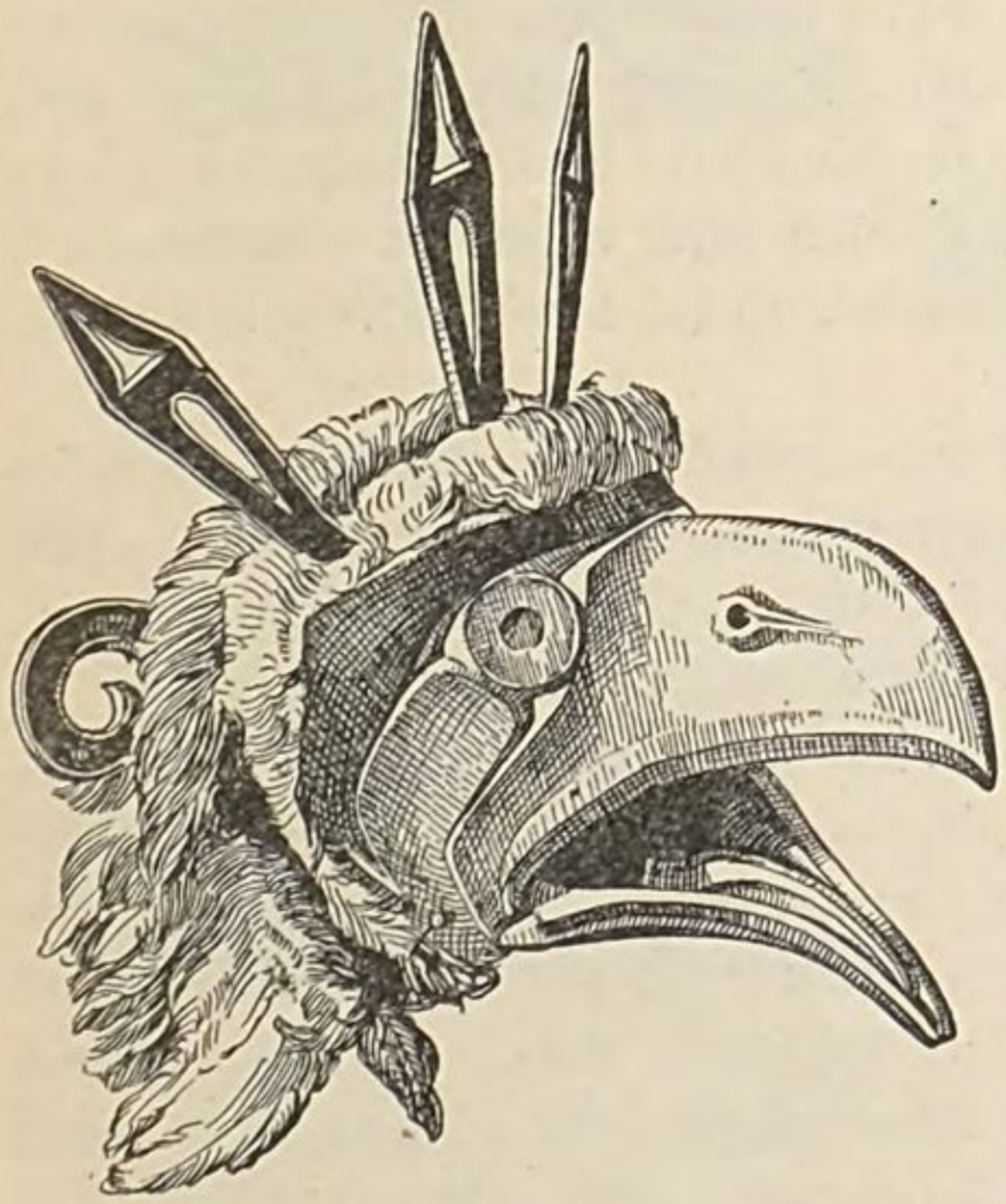


Fig. 138.

MASK OF QŌ'LÔC.

Length, 14 inches.

IV A, No. 6894, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

[1] Page 506.

or three points on top, and mica is glued on its painting. It is intended to represent the sī′siuL, but I am not able to interpret the carving in detail. The characteristic figure of the sī′siuL certainly does not appear on it.

Other t'ō′X'uît, instead of conjuring the sī′siuL, bring up the nō′nLEmg·ila (making foolish) (figs. 156–158),[1] a small human figure with movable head and arms. It dances about, and then one or two birds are seen to fly down from the roof and alight on its head. In fig. 158 the bird is seen sitting on the figure's head. Fig. 159 represents a bird which is let down by means of strings, at the same time flapping its leather wings. Often the bird takes hold of the figure's head and carries it away, to return it after a while. The face of the nō′nLEmg·ila is always painted in the same manner. It is white, and two black lines, on to which mica is glued, run downward from the eyes. The head is set with tufts of human hair. The figure is also worked from underground. In some dances only the head of the nō′nLEmg·ila is used (fig. 160, p. 510). It is worn by a dancer who wraps a blanket over his head and carries the head in front of his stomach.

Fig. 139.

WHISTLE OF QŌ′LÔC.

Length, 7½ inches.

IV A, No. 6895, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

The t'ō′X'uît is supposed to be able to make every object he touches rattle. A stone, a staff, a pipe, etc., is handed him by any member of the audience, and, when he shakes it, it rattles. He wears a small rattle concealed under his hemlock bracelet, which produces this sound.

The La′Lasiqoala call the t'ō′X'uît ō′lala, and have special names for the various performances. They use ornaments of red cedar bark. The ring of the ō′lala is shown in fig. 161 (p. 510). The ō′lala, when returning from the woods, has many bloody lines on his cheek, "the rubbing of Wīnā′lag·ilîs's canoe." Four horizontal lines run over each cheek, nearly reaching the nose. Above them is one just under the eyes crossing the bridge of the nose, and two short vertical lines run down the temples outside the eyes. Another painting of the ō′lala consists of one pair of parallel black lines running from one cheek over the upper part of the bridge of the nose to the other cheek, and of a pair running horizontally across the middle of the forehead. Following is one of the ō′lala's songs:[2]

1. (Ō′lala sings:) The world knows that I have reached the dancing pole of our world.
2. (The people sing:) Hold upright the great post in the middle of the world.
3. You who holds up the world.
4. You keep the sky from falling down like a foundation built of interlocking logs.

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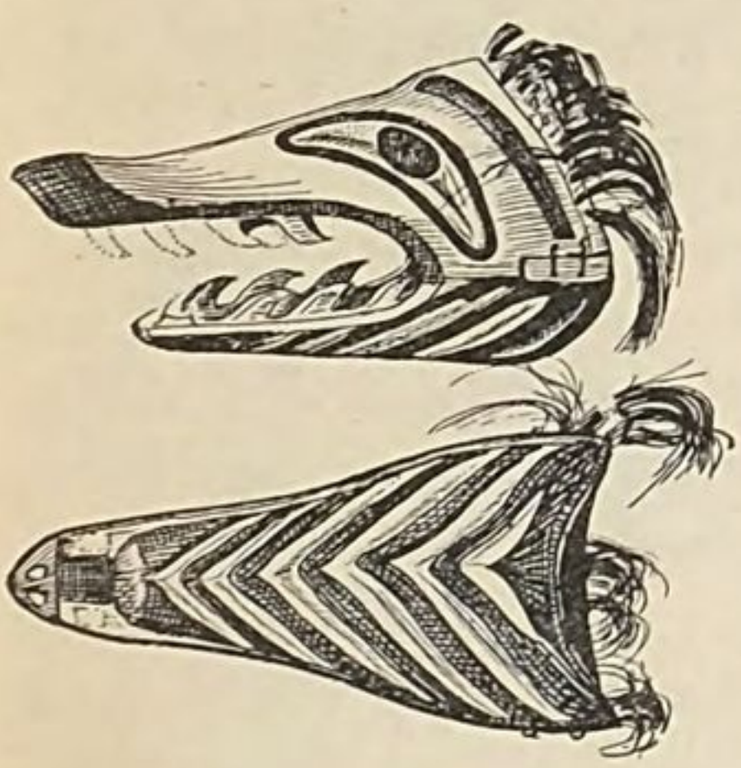
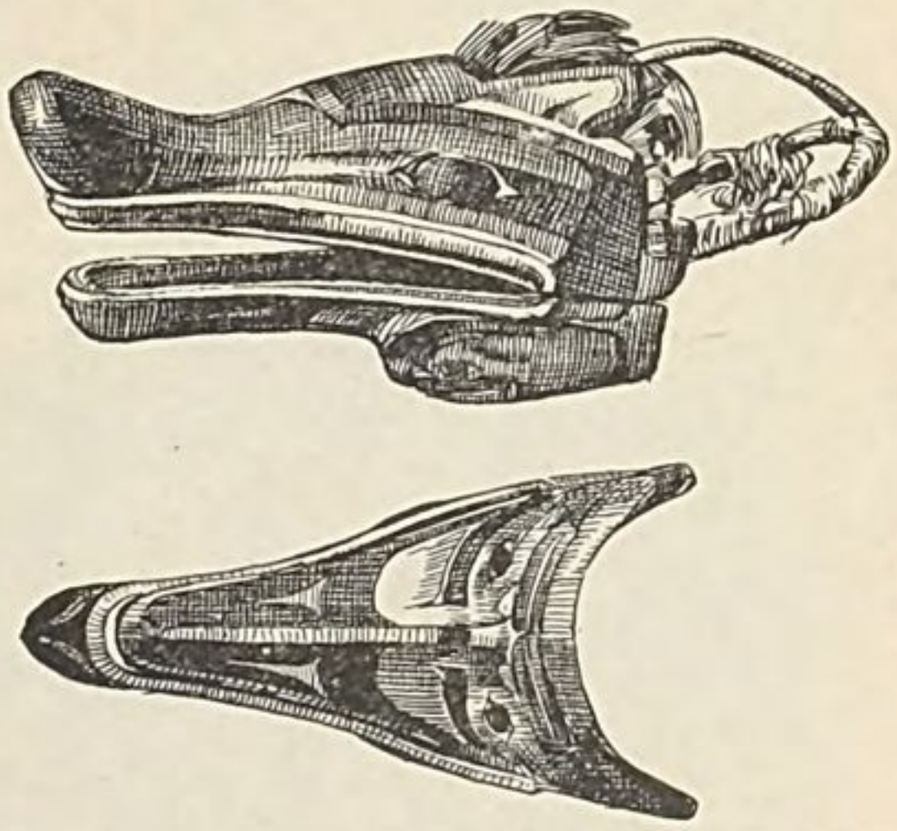
[1] Pages 501–509.

[2] Appendix, page 716.

A modification of the ō′lala is the ts'ē′k'ois, who it is believed has many birds in his stomach, the voices of which are heard constantly. He holds small whistles hidden in his mouth, which he exchanges from time to time, and thus produces the various sounds. His ornaments are



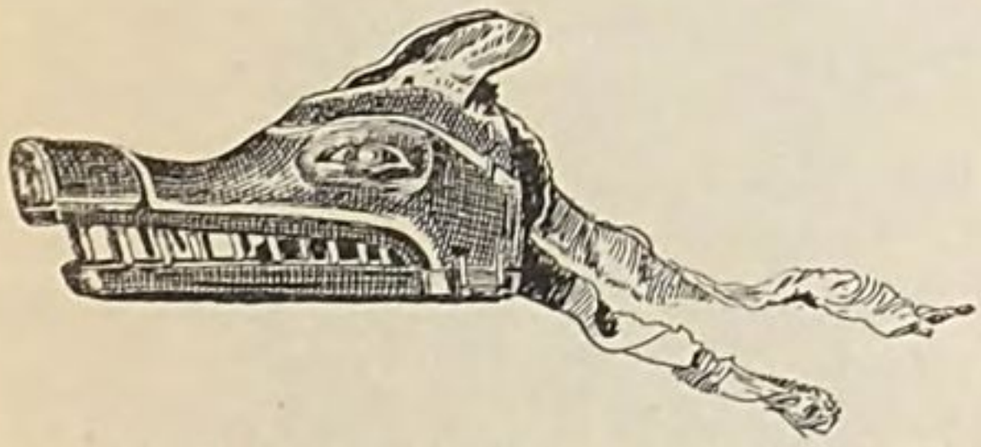
Length, 9½ inches; black and white. V B, No. 27.



Length, 12 inches; black and red. IV A, No. 1258.

Length, 13¾ inches; black and white. V P No. 178.

Length, 15¾ inches; black and red. IV A, No. 1269.



Length, 8½ inches; black and red. IV A, No. 421.

Fig. 140.

WOLF MASKS FOR THE WALAS'AXA′.

Royal Ethnographical Museum, Berlin. Collected by Captain Cook and A. Jacobsen.

shown in fig. 162 (p. 511). His painting consists of groups of three parallel short black lines. There are five such groups of vertical lines distributed irregularly over each cheek. Three longer lines occupy the middle of the forehead, running almost vertically from the hair to the nose. Three more lines occupy the chin—one running from the middle

of the under lip downward; the other two, one from each corner of the mouth downward. Following is one of the songs of the ts'ē'k'ois:[1]

1. Keep silent the sacred voices which we hear proceeding from your body.
2. Everybody knows your name. Keep your sacred whistles quiet.
3. Everybody knows your name, great healer!

The sī'lîs (snake in belly) is believed to have a snake in his stomach. He hides a piece of kelp in his mouth, which during his dance he blows

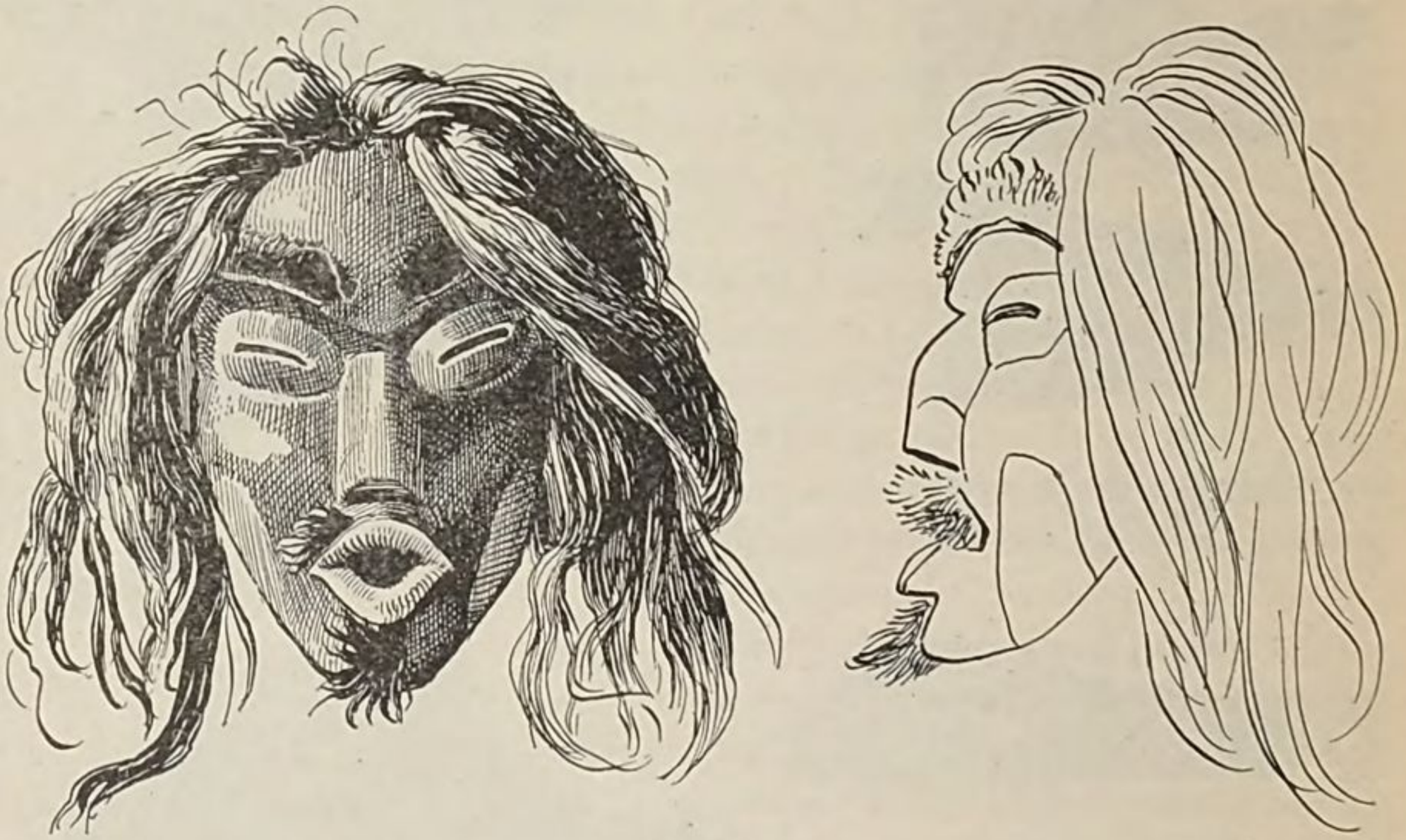


Fig. 141

MASK OF TS'Ō'NOQOA.

Height, 15 inches; black, red.

IV A, No. 555, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

up so that it grows out of his mouth like the tail of a snake. His ornaments are shown in fig. 163 (p. 511). Following is his song:[1]

The people sing: How great is our famous one!
How great is his name!
The dreaded spirit is coming in his canoe!
How great is his name!
Sī'lîs sings: Do not be troubled! Do not be afraid on account of the storm caused by my great protector.
My protector the sī'siuL goes right up to the greatest chiefs.
The people sing: How great is our famous one!
Sī'lîs sings: He said to me: "You will take counsel with Wīnā'lag·ilîs.
He said to me: "You will be friend to Wīnā'lag·ilîs.
The people sing: How great is our famous one.

The Ā''mlala is also initiated by Wīnā'lag·ilîs. He is not counted as a member of the t'ō'X'uît, but performs a separate dance. His head ring and neck ring are made of hemlock. He wears a club, the end of which is set with long thorns (fig. 164, p. 512). After several circuits around the fire, he presses these thorns into his head, and blood is seen

[1] Appendix, page 716.

to flow freely. Then he presses them into his neck. His rings are made of hemlock branches, in which a tube of kelp is hidden. The tube is filled with blood. The thorns are pushed into the kelp, out of which the blood runs over the face and down the body.

Fig. 142.

MASK OF TS'Ō'NOQOA.

Height, 16½ inches; black, red.

IV A, No. 883, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

The last of the dances, the origin of which is ascribed to Wīnā'lag·ilîs, is the hawī'nalaL, the war dance. The legend of this dance belongs to the clan Maam'-tag·ila. In the beginning of the world there was a man named Wī'naXwīna-g·îm, who was a great warrior. He wanted to go on war expeditions all the time. The people who desired to have peace tied him with strong ropes. He, however, broke them without difficulty. He held a knife in his hands, the handle of which represented the sī'siuL, and ran out of the house, and killed everybody who set his foot on the street. The blood ran in streams down to the water. The people finally took hold of him again, cut holes through his thighs and through his back, and pulled ropes through them. Thus they hung him onto the beam of the house and began to sing songs which they hoped would appease him. While he was swinging from the beam he still held his knife, and as he could not cut anyone else, he cut his own head. His wounds did not hurt him; on the

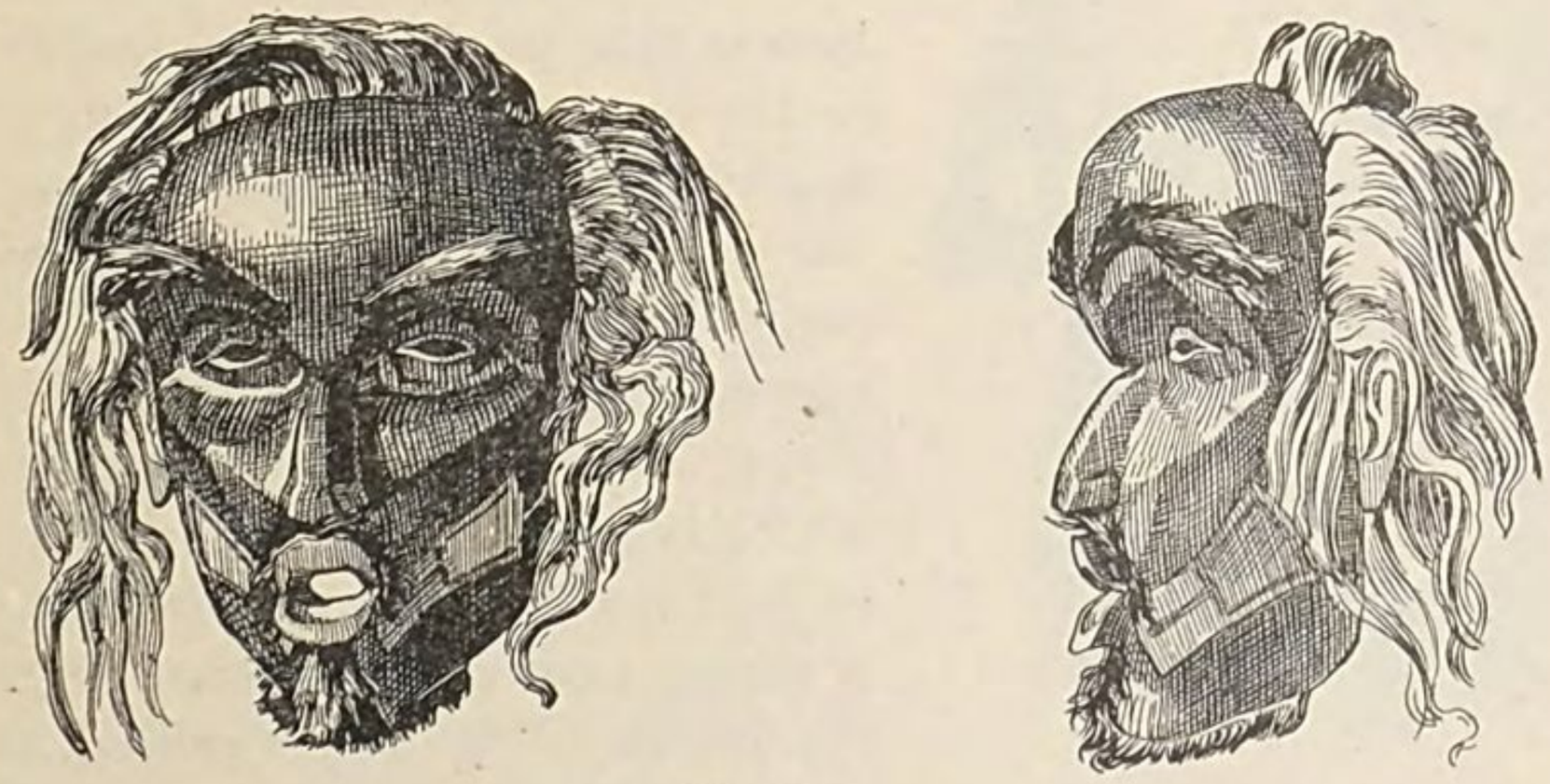


Fig. 143.

MASK OF TS'Ō'NOQOA.

Height, 11½ inches.

On each cheek is a painting representing a copper.

IV A, No. 1286, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

contrary, he enjoyed them. After a while he became quiet. Then they took him down. Later on, whenever he came back from war, he asked the people to pull ropes through his back and to haul him up to the roof.

They tied to his back a sī′siuL carving to which ropes were fastened, stretched a heavy rope from the beach to the roof of his house, and pulled him up. They carried him around the roof and let him down again.

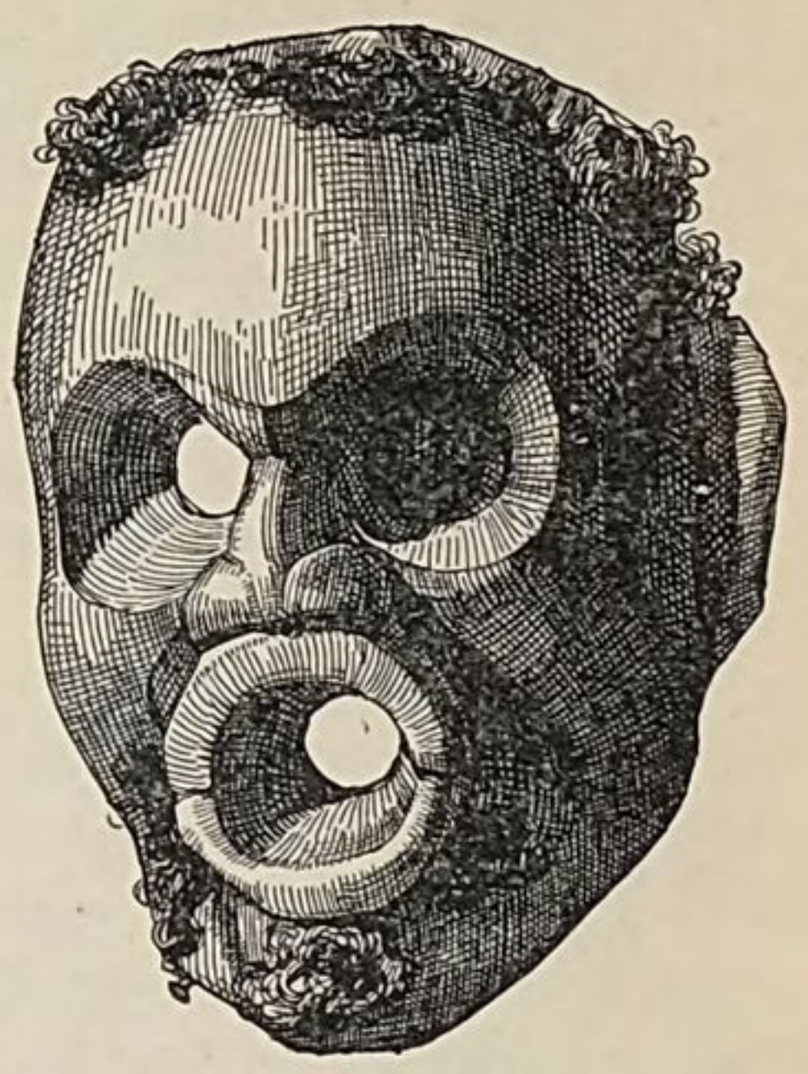


Fig. 144.

MASK OF TS'Ō′NOQOA.

Height, 18 inches; black.

IV A, No. 6896, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

The performance of the hawī′nalaL is a repetition of the deeds of this man. When he is being initiated, he fasts in the woods until he grows very thin. When he comes back, he wears ornaments of hemlock branches. Small thin slabs of wood carved in the shape of paddles (fig. 165, p. 513) are sewed along his arms and legs, across his chest, and down his sides. Then a rope of red cedar bark is stretched from the roof of the dancing house to the beach. Nobody is allowed to go under it, and no canoe must pass in front of it. If a canoe should transgress this law, it is seized, carried into the house, and slung to the beams, where it remains for four days. When he hawī′nalaL dances in the house, his legs and his back are cut andt ropes pulled through the holes, which are held by two men. The painting on a bedroom (Plates 40, 41) shows this very well. The hawī′nalaL pulls on the strings as hard as possible, so that his flesh is pulled far out. He stretches his arms backward, crying "ai, ai!" which means that he desires his leader to pull on the ropes. Then he looks upward and points up with his first fingers, crying "ai, ai!" which means, "Hang me to the beam!" He carries a belt or neck ring carved in the form of the sī′siuL. Fig. 166, p. 514, shows a neck ring of this kind, which is jointed and hinged with leather so that it can be hung around the neck. A string runs along the opening sides of the joints. When it is pulled, the neck ring straightens and is used by the hawī′nalaL as a sword or lance to hurt himself. The belt of the hawī′nalaL has sī′siuL heads (fig. 167, p. 514). His knife, which he carries in his hand (q'E′Layu), shows the same design (figs. 168, 169, p. 515). While the hawī′nalaL is making his circuits, moving his hands, and crying as described above, and making high steps, he cuts

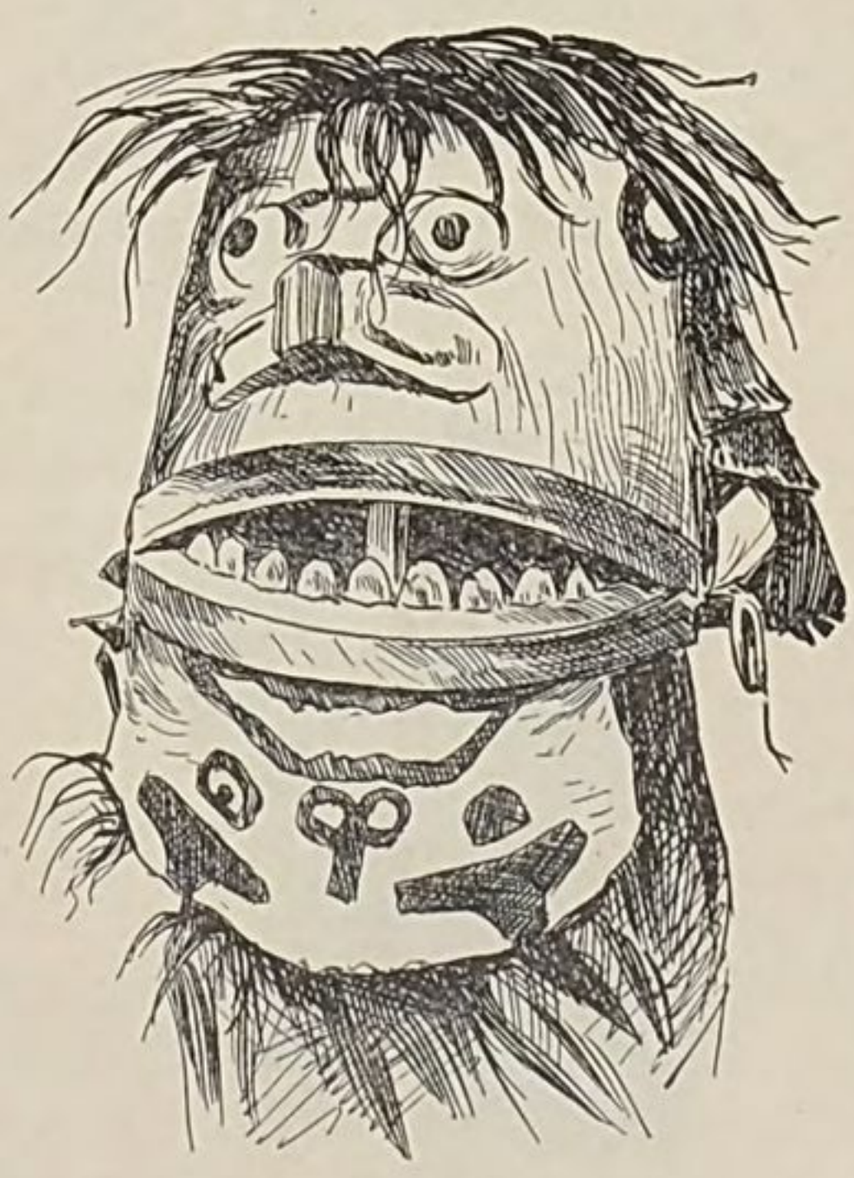
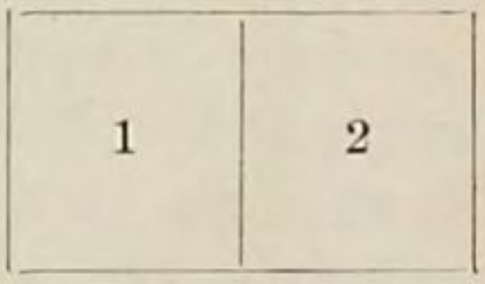


Fig. 145.

MASK OF THE SEA MONSTER ′K·ÎM.

Museum of the Geological Survey, Ottawa. Collected by F. Boas.

EXPLANATION OF PLATE 40.

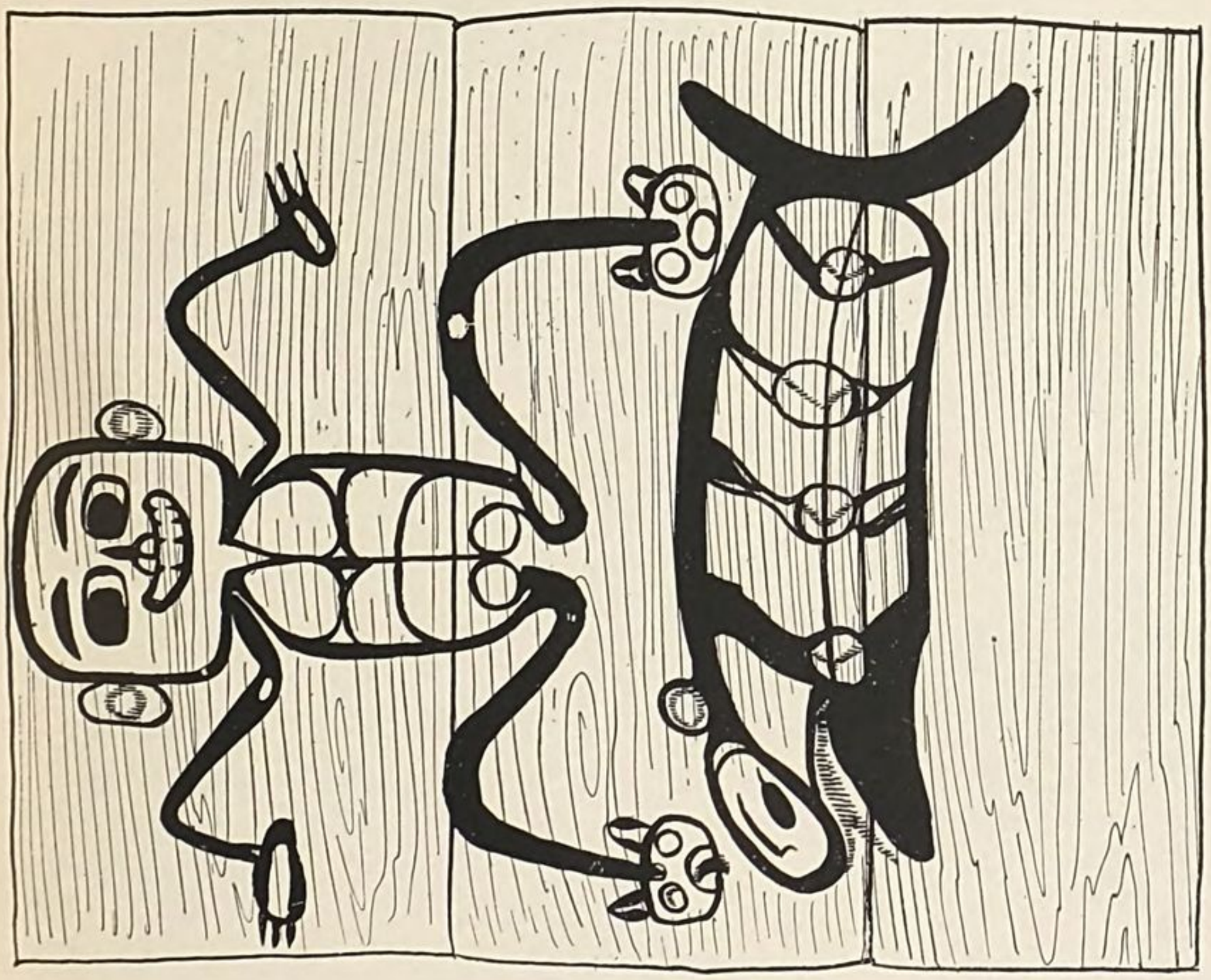


PAINTINGS ON THE SIDES OF A BEDROOM.

FIG. 1 shows a picture of a wolf swallowing a man, and of the hawī'nalaL with his two assistants. The Hawī'nalaL has a sī'siuL belt, and is stabbing himself with a knife. One of his assistants is holding him by a rope passing through the skin of his legs, and the other by a rope passing through the skin of his back.

FIG. 2 is a picture of a man squatting over a whale.

IV A, No. 1130, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.



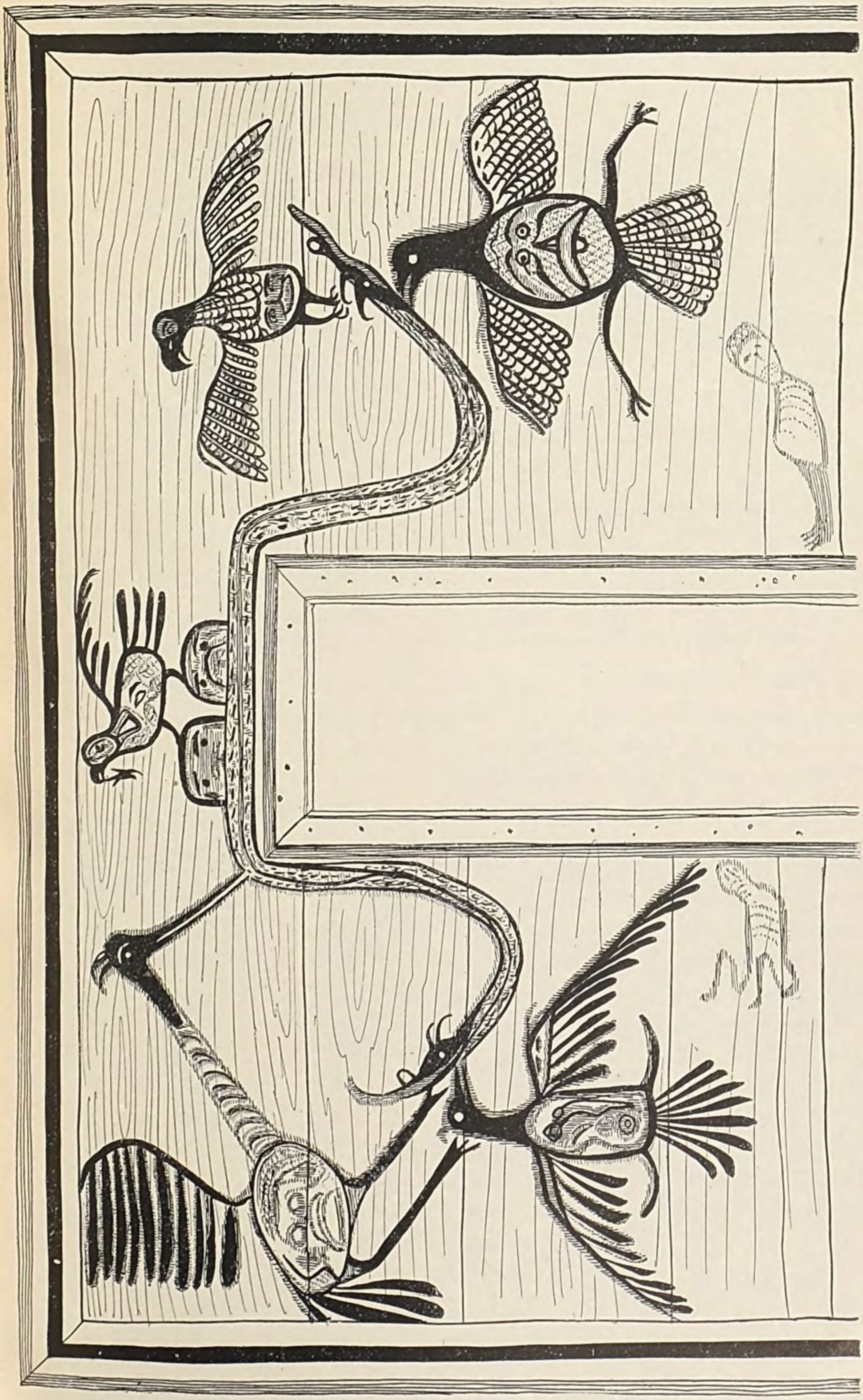
PAINTINGS ON THE SIDES OF A BEDROOM.

EXPLANATION OF PLATE 41.

PAINTING ON THE FRONT OF A BEDROOM.

Over the door is the sī′sīuL being attacked by birds. To the left the crane is represented, and below this the thunder-bird. The upper right-hand figure represents the eagle, and the lower figure on the same side the raven. Two men whom the sī′sīuL has killed are shown near the bottom of the door.

IV A, No. 1130, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.



PAINTING ON THE FRONT OF A BEDROOM.

his head with his knife, and finally with a sudden jerk tears his flesh so that the ropes drop down. Then he disappears in his room in the rear of the house. At other times ropes are passed through his back and thighs and he is pulled up to the beams hanging by the ropes. He carries his knife and cuts his head while being suspended there. As soon as he is being hauled up, the nōō′nLEmaLa take their lances and crowd under the place where he is hanging, holding the points of their lances upward, so that he would drop right on to them if the ropes should give way. The bears stand around waiting to tear him if he should fall, and the hā′mats'as squat near by, because they are to eat him if he should fall upon the lances of the nōō′nLEmaLa.

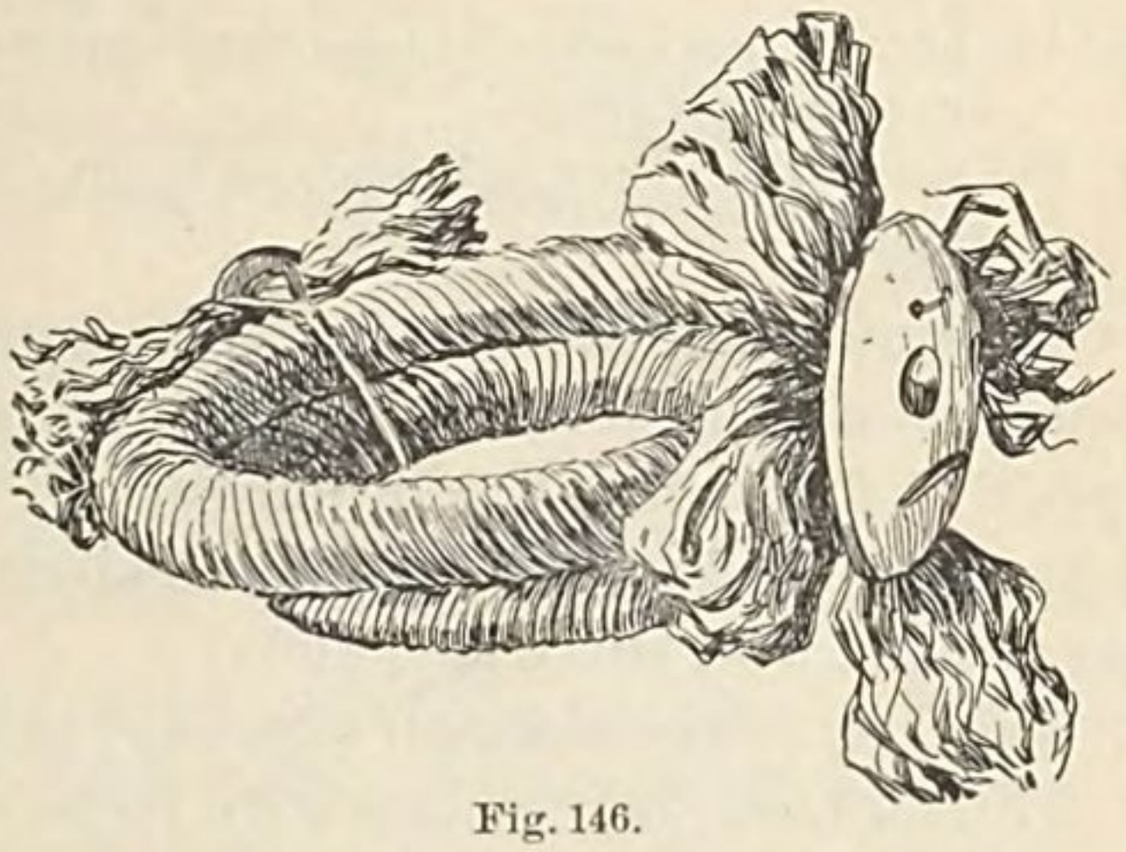


Fig. 146.

HEAD RING OF GHOST DANCER.

Cat. No. 169115, U. S. N. M. Collected by F. Boas.

Here is a song of the hawī′nalaL:

1. They tried to hang me and to kill me in war.
2. But the water where they tried to kill me only turned into curdled blood.

I also give (figs. 170, 171, p. 516) the mask of the earthquake dancer (Xoā′ēxoē). He wears a rattle consisting of a ring on which perforated shells are strung (fig. 172, p. 516). His dance is believed to shake the ground and to be a certain means of bringing back the hā′mats'a who is being initiated.

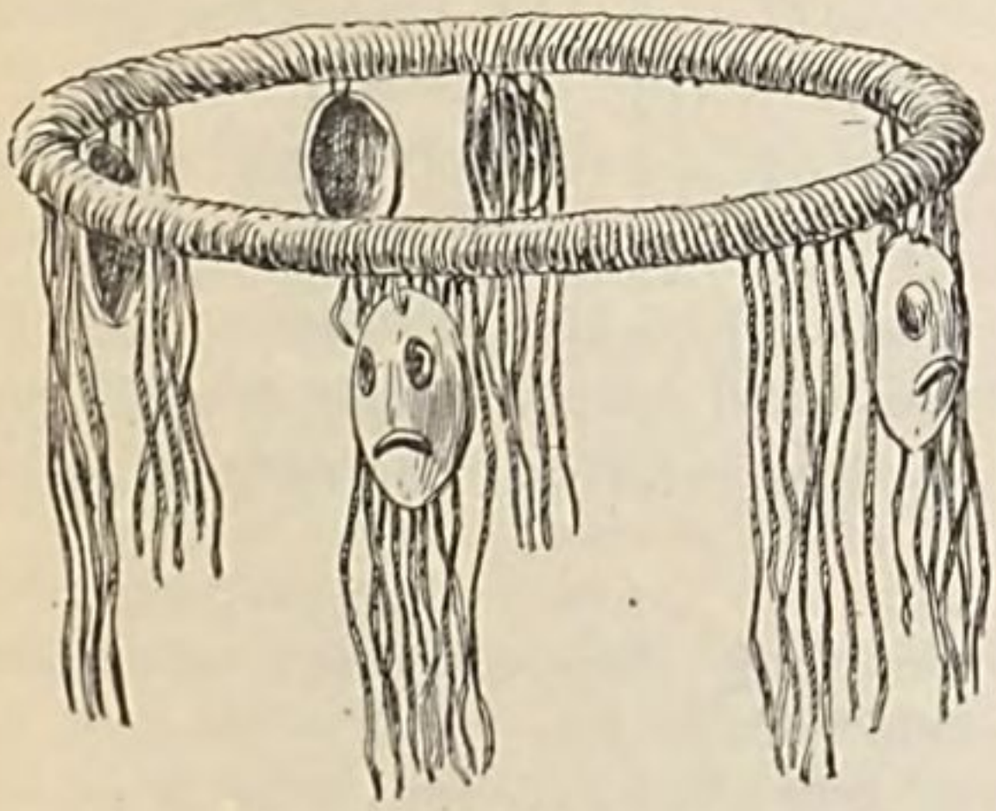


Fig. 147.

NECK RING OF GHOST DANCER.

Cat. No. 169116, U. S. N. M. Collected by F. Boas.

I will add here a song of a mask in regard to which I have not been able to obtain any definite information. It is called Hai′alik·îmL and belonged originally to the G·ē′xsEm of the Naqô′mg·ilisala, whose ancestor, Hē′lig·ilig·ala, it is said to represent. The dancer is initiated in the house. In his first and third dances he wears ornaments of red cedar bark which have a horn on each side, one behind, and a flat crosspiece in front. In his second and fourth dances he wears a curious mask.

After the mask has disappeared, the people sing:[1]

1. Everybody goes to him to obtain dances.
2. In the beginning the never stopping one spread his wings over your head.[2]

[1] Appendix, page 717.

[2] The never stopping one, Wīnā′lag·ilis.

It may be that the following song belongs to the same mask:[1]

1. Aia haia! Sing Haialik·alaL, sing winter dance songs, great supernatural spirit!
2. Aia haia! Then the people will ask you to fulfill their desires, great supernatural spirit.
3. Aia haia! Then they will take the cedar bark ornaments out of your hair, great supernatural spirit.
4. Aia haia! Then they will ask you to give them plenty to eat, great supernatural spirit.

The dance Hai'alik·auaē of the various tribes belongs here, but I have not been able to collect any of the songs belonging to it. Figs. 173–177 (pp. 517–520) show the ornaments of the Kwakiutl dancer; figs. 178–180 (pp. 521–523), the ornaments of Hai'alik·auaē of the Nimkish; and fig. 181, p. 524, the L'ā'sq'ēnôx.

The ring of the shaman (fig. 182) is figured on page 525.

The La'Lasiqoala embrace all those who are for the first time initiated as winter dancers in one group, who are called wā'tanEm, the lowest grade of the winter dance societies. Their head ring is shown in fig. 183 (p. 525).

The same type of ring, but somewhat larger, is used by the chief of the killer whale society of the Kwakiutl (fig. 184, p. 526).

Following is a wā'tanEm song:[2]

1. You do not go into Wīnā'lag·ilis' canoe, you who are known everywhere.
2. You do not go into Wīnā'lag·ilis' canoe, you whose name is known everywhere.
3. You, who will be feared by all the supernatural beings.
4. You, great one, who will be feared by all the supernatural beings.

The head ring worn by the quē'qutsa is shown in fig. 185 (p. 527). When a person is to be initiated for the first time, he receives among the Kwakiutl the rings shown in figs. 186, 187 (pp. 527, 528).

It remains to give a list of the dances according to their rank. There are many among them, about which I have no further information than that contained in the following list. I also give the number of songs which belong to each dancer, his whistles, and secret songs, which are sung by the dancer himself. This order has reference, of course, only to the Kwakiutl proper:

1. Awī'lōLlaL, four songs; four whistles; secret song. Hemlock rings. (Dancers who have acquired hā'mats'a, hai'alik·ilaL, t'ō'X'uît.)
2. Hā'mats'a, eight songs; four whistles. Red cedar bark.
3. Ha'mshamtsEs, two songs. Red cedar bark.
4. Nō'ntsîstalaL, four songs; two whistles. Red and white cedar bark. (Obtained from Awī'k·'ēnôx.)
5. Qoē'qoasElaL, four songs; two whistles; secret song. Red and white cedar bark. (Obtained from Awī'k·'ēnôx, beggar dance.)
6. Mē'iLa, two songs; two whistles; Red and white cedar bark. (Obtained from Awī'k·'ēnôx.)
7. Nā'nē s BaxbakuālanuXsī'waē, two songs; two whistles; secret song. Red and white cedar bark. (Bear of BaxbakuālanuXsī'waē.)
8. T'ō'X'uît with frog, one song; two whistles; secret song. Hemlock.

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[1] Appendix, p. 717.

[2] Appendix, p. 718.

9. T'ō'X'uît with bird, one song; two or more whistles. Hemlock.
10. K·î'nqalaLala, two songs. Red cedar bark.
11. Q'ō'minōqa, four songs; two whistles. Red and white cedar bark. Rich woman.
12. Hawī'nalaL, two songs; secret song. Hemlock. War dance.
13. Nā'nē, one song. Red and white cedar bark. Grizzly bear.
14. Hawā'yadalaL, one song. Red and white cedar bark. (A nū'LmaL.)
15. G·ē'qamēqōLEla, one song. Red and white cedar bark. (A nū'LmaL.)
16. NE'nq'ōLEla, one song. Red and white cedar bark. (Bear nū'LmaL.)
17. Nū'LmaL, one song. Red cedar bark.
18. Ku'nXulaL, one song; one deep whistle. Red and white cedar bark. Thunder-bird dance.
19. Hō'Xhôq, one song. Red and white cedar bark.
20. Qoqoā'XulaL, one song. Red and white cedar bark. Raven dance.
21. Hawā'LElaL, two songs; two small whistles. Red and white cedar bark. Otter dance.
22. Xuā'Xuēlik·a, one song; one whistle. Red and white cedar bark. Wolf dance.
23. Awā'sElaL, one song. Red and white cedar bark. Dog dance.
24. Hā''maa, one song. Red and white cedar bark.
25. Ā''mlala, two songs. Hemlock.
26. Lō'koala, one song. Red cedar bark. Wolf dance.
27. Hamā'xalaL, one song. Red and white cedar bark. Killer whale dance.
28. Qoqoē'k·ilaL, one song; one deep whistle. Red and white cedar bark. Whale dance.
29. Yîyā'g·adElaL, one song. Red and white cedar bark. Sea monster dance.
30. Hayaq'antalaL, one song. Red and white cedar bark. Talker's dance.
31. Hawē'xaqulaL, one song. Red and white cedar bark. Potlatch dance.
32. Aō'malaL, one song. Red cedar bark. Chieftainess's dance.
33. LaLaā'koalaL, one song. Red cedar bark. Board dance.
34. Nā'naqaualiL, two songs. Red cedar bark. Sunrise dance.
35. Ma'mtsālaL, one song; two small whistles. Hemlock. Mink dance.
36. A'mLēta, one song. Red and white cedar bark.
37. Female Mē'iLa, one song. Feathers.
38. Mā'tEm, two songs. Hemlock.
39. Q'ō'malaL, two songs. Hemlock. Rich dance.
40. NūLmēista, two songs. Red and white cedar bark.
41. Hats'ē'XulaL, two songs. Red and white cedar bark.
42. Hamē'yalaL, two songs. Red cedar bark and feathers. Salmon dance.
43. Walas'axā'k^u, two songs. Red and white cedar bark. Great from above.
44. LElō'LalaL, two songs; one large whistle. Red and white cedar bark. Ghost dance. Has no whistle in Newettee.
45. Hai'alik·ilaL, two songs. Red cedar bark.
46. Nō'LEm, one song. Red and white cedar bark.
47. Pā'xalalaL, two songs. Red cedar bark. Shaman's dance.
48. Hā'masElaL, one song. Red and white cedar bark. Wasp dance.
49. Qō'lôs, one song; one whistle. Red and white cedar bark. An eagle.
50. Wīnā'lag·ilîs, one song. Red cedar bark.
51. Qautēx·axaa'k^u, one song. Red and white cedar bark. Distribution of property from above.
52. Sī'siyuLalaL, two songs. Red cedar bark. Sī'siuL dance.
53. Qa'mXulaL, one song. Down. Down dance.

The classification and order of dances varies considerably among the various groups of tribes. The order given above belongs to the Kwakiutl, Ma'malēleqala, Nimkish, and Lau'itsîs.

The Ts'ā'watEēnôx, Guau'aēnôx, Haxuā'mîs, T'Ena'xtax, and A'waiLEla have the following order so far as I have been able to learn:

1. Mā'maq'a.
2. Hā'mats'a.
3. Hai'aq'antElaL (speaker dance).
4. Hawē'xaqulaL, who induces chiefs to destroy property, coppers, etc.
5. Walas'axā'aL.
6. Hauā'iadalaL (a fool dance).

Among the Koskimo, G·ō'p'ēnôx, L'ā'sq'ēnôx, and Gua'ts'ēnôx the t'ō'X'uît is first in rank. Next is the mā'maq'a, and then follows the hā'mats'a.

The La'Lasiqoala, Naqô'mg·ilisala, Nā'qoaqtôq, and Goasi'la do not include all the dances enumerated above in the winter ceremonial (ts'ē'ts'aēqa). A large number, particularly the fool dancers, the hawī'nalaL, and all the animals, are included in a ceremonial called nō'nLEm, which is neither bā'xus (secular or profane) nor sacred. Songs belonging to both seasons are used in this ceremonial. I shall discuss this ceremonial more fully later on (Chapter XII, p. 621). The number of members of the ts'ē'ts'aeqa is consequently small. They are arranged in the following order, beginning with the highest:

1. Mā'maq'a.
2. Hā'mats'a.
3. Ha'mtsEtsōē. This is a hā'mats'a who is not taken away by BaxbakuālanuXsī'waē, but only dreams of him. Consequently his initiation is performed in the house. He has neither the hā'mats'a cry (hāp) nor the ha'mshamtsEs cry (hwîp). His song has words only. His badges are like those of the hā'mats'a.
4. Ts'ē'koîs.
5. Ts'ē'koa'tâ.
6. H·ai'alik·auaē.
7. Ō'lala (corresponding to the t'ō'X'uît).
8. Lolō'LalaL.
9. YiaiatalaL, or Q'ō'minōqisaL.
10. Pa'xalalaL, shaman dance.
11. Wā'tanEm. These are the novices who have just entered the ts'ē'ts'aēqa. After the hā'mats'a has been initiated four times he is wā'tanEm—that means, pulled out of the dancing house. He becomes a quē'qutsa. During this transitional period he is wāLawē, i. e., wā'tanEm in a transitional stage. When a bā'xus offends the q'ā'q'anas, which include the above dancers, he is made wā'tanEm. He dances in four houses and becomes a novice. The following year he will be initiated in one of the higher societies.

IX. The Winter Ceremonial of the Kwakiutl.

I can now proceed to describe the ceremonial at which all these dancers perform their ceremonies. Generally it is connected with the refund of the purchase money for a wife, the qautē'x·a, as described on page 421.

I will describe first the great ceremonial which is the same for all the laxsâ, but most elaborate for the initiation of a hā'mats'a. The whole

THE MASTER OF CEREMONIES, NŪ′XNĒMÎS, AND HIS SPEAKER, HŌ′LELITĒ.

The figure to the right represents the master of ceremonies.

From a photograph.

ceremonial is in charge of a master of ceremonies, whose name is Nū′xnēmîs and LE′mwala, while his profane name is Ō′mx·'it; the winter name of his speaker is Hō′LElitē. A number of further officers will be described in the course of this chapter. All these officers and the names of the officers derive their origin from a myth telling how the animals held their first winter ceremonial. I shall relate the myth later on (page 538). Plate 42 represents the present master of ceremonies and his speaker.

Fig. 148.

HEAD RING OF GHOST DANCER.

La′Lasiqoala.

IV A, No.6874, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

At the time of marriage the bride's father has promised to transfer his membership in one of the secret societies to one of his son-in-law's children. When a son of the latter has reached the age of 10 or 12 years, or even earlier, he is initiated in one of the lower secret societies, through which he must pass before he can become a member of the hā′mats'a society. As soon as he is entitled to become a member of this society, his father invites the three principal chiefs of the tribe to his house and informs them that he desires his father-in-law to make his son a member of the secret society. The celebration of this event is exceedingly expensive, and for this reason the three chiefs investigate the debts and the property of the man and of his father-in-law, in order to make sure that they can meet the expenses incidental to the ceremonies. If they find the amount of property sufficient, they give permission for the celebration of the festival. In this case they order the father to invite all the chiefs of the tribe to meet on the fourth day. When they assemble, the three head chiefs inform the young chiefs of the plan, and the latter give their consent.

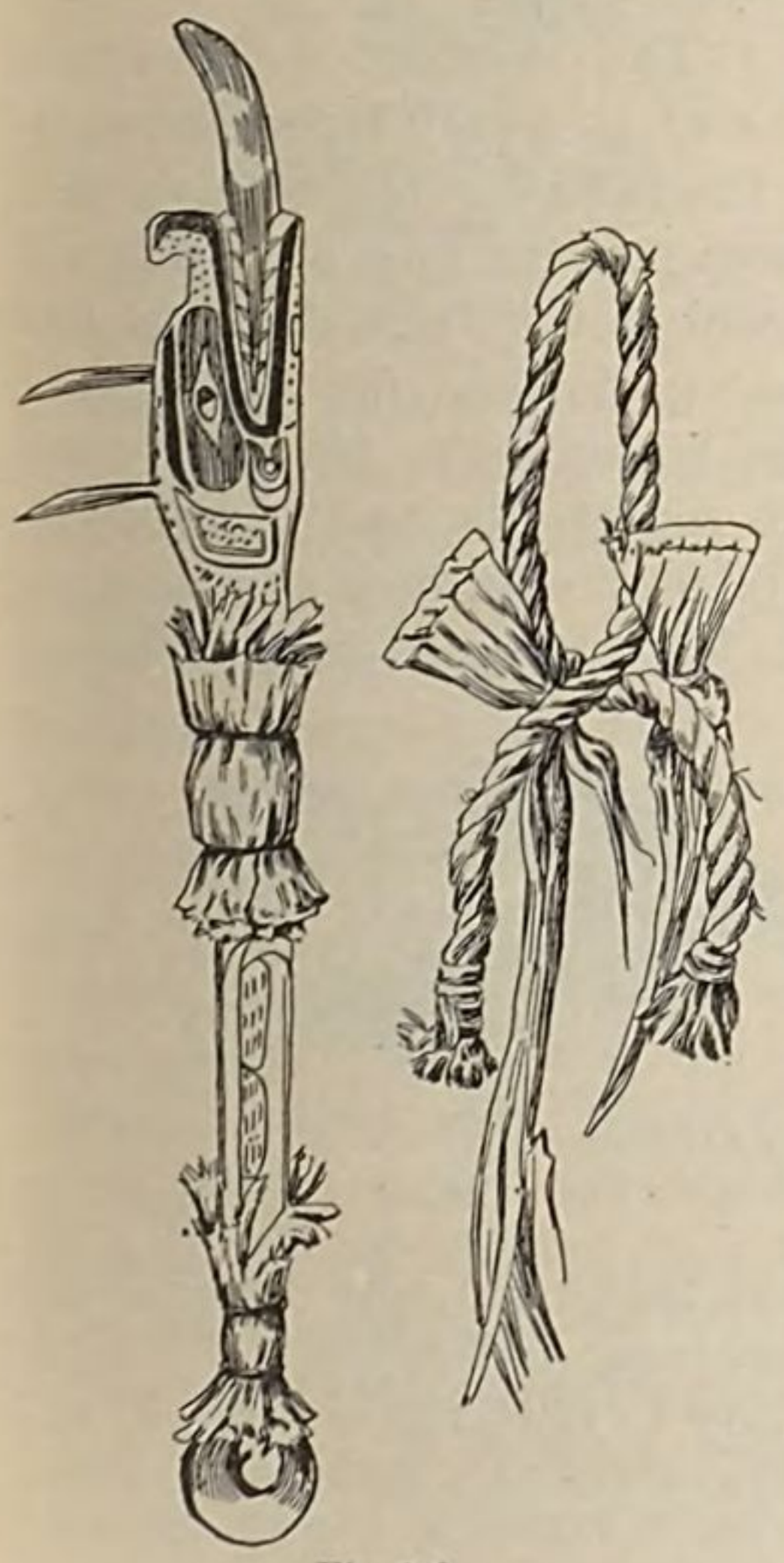

Fig. 149.

CLUB AND NECK RING OF MĒ′ILA.

From a sketch made at the World's Columbian Exposition.

At this meeting, the man who gives the dance notifies his father-in-law that he desires to have the blankets which he paid for his wife returned, and that he wants to have the box containing his father-in-law's dance.

Then the chiefs order the man to invite the whole tribe to a meeting which is to be held four days later. The three head chiefs inform the tribe, in a speech made in a low voice, of their intention to hold a winter dance, and the young chiefs request all to prepare themselves for this festival. In particular, they are asked to clean themselves, and to refrain from intercourse with women, as the spirit Wīnā'lag·ilîs, who has his home in the north, but dwells among the Indians during the dancing season, dislikes people who are unclean, or such as have had intercourse with women. The young man who is going to give the winter ceremonial is called the yē'wix·ila.

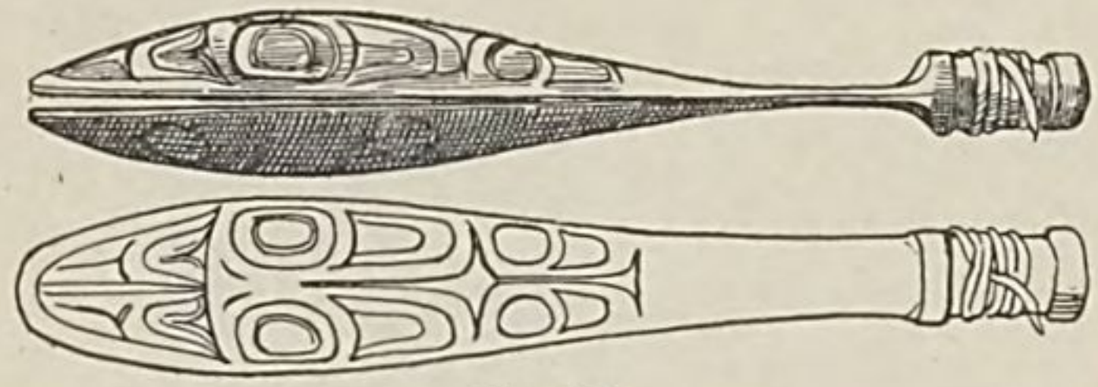

Fig. 150.

CLAPPER OF MĒ'ILA.

Length, 9½ inches

IV A, No. 1005, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

At this meeting, the father-in-law calls one of his speakers, who must step into the middle of the house, holding a pole, which is from 6 to 8 feet long. It is called the winter-dance pole.

The speaker delivers a speech, in which he sets forth the amount of property represented by the pole, and announces the intention of the father-in-law to give it to the young man. He asks the latter to step up to the pole and touch it, as a sign of acceptance. The whole assembly join in this demand, and the young man, accompanied by a chief—who is paid for this service later on—steps up to the pole. The chief who speaks for the young man asks the father-in-law what the pole represents, and the latter's speaker sets forth once more the amount of property, such as blankets, copper bracelets, food, and grease, which is to be used in the dance.

Fig. 151.

HEAD RINGS OF MĀ'MAQ'A OF THE LA'LASIQOALA.

IV A, No. 6864, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

Then the chief representing the young man takes the pole, lays it over his shoulder, and runs around the fire, stooping and crying, "Whoo! whoo! whoo!" The meaning of this action is that the weight of the property represented by the pole is too heavy for him to carry. Then he sings the following song:[1]

The Spirit of the Winter Dance came down,
The Spirit of the Winter Dance came down and stays here with me.

Then the master of the ceremonies rises and orders everyone to bathe early in the morning for four days before the crows begin to cry,

[1] Appendix, page 718.

and thus to prepare to meet Wīnā'lag·ilîs. At this time the winter-dance whistles are heard for the first time. These whistles represent the voices of the spirits of the winter dance. When first heard, they appear to be far away from the house in a northerly direction. The second time they come nearer the house, and thus they are heard four times, nearer and nearer. This indicates that the spirit approaches the village from the north. Finally, the whistles of the spirit of the cannibal society are heard near the house. Then the sound is heard on the roof and moves around it four times. At this time the son of the man who gives the festival suddenly disappears (x·is'ē't), and a few minutes later he is heard to cry in the woods "hāp, hāp, hāp," the sound which is ascribed to the cannibal spirit BaxbakuālanuXsī'waē. The master of ceremonies asks the people if they know the meaning of all this, and another chief replies that BaxbakuālanuXsī'waē has taken the young man to his house to initiate him in the cannibal ceremonies. To this the master of ceremonies replies that after four days the people are to assemble again, to receive the ornaments of cedar bark. He asks them to sing their summer songs during this time, to use their summer names, and to make merry, because as soon as the four days are over they will be forbidden to use their summer names and to sing their summer songs. On the following morning when the crows begin to cry, everybody, young and old, takes a bath in the sea. They rub their bodies with hemlock branches, in order to clean themselves preparatory to the advent of the spirit Wīnā'lag·ilîs. On the evening of the third day the master of ceremonies distributes plain head ornaments and neck rings of cedar bark among twelve messengers, who must blacken their faces and go to the houses of the people in order to invite them to the meeting to be held the following day. They receive in payment a button blanket from the master of ceremonies, which is not returned. Their offices are not hereditary. Persons who have good voices are selected to act as messengers. They carry in their hands staffs about 8 feet long.

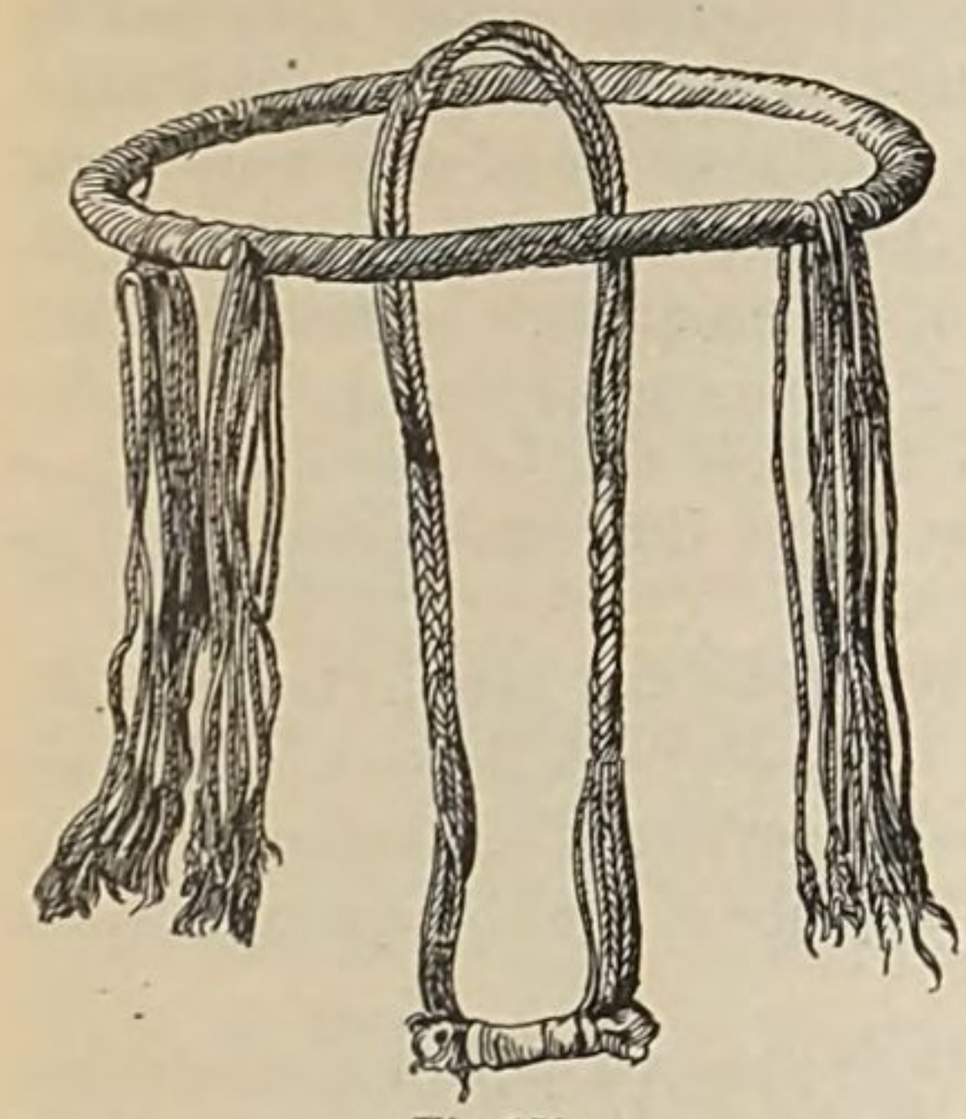

Fig. 152.

NECK RING OF MĀ'MAQ'A.

La'Lasiqoala.

IV A, No. 6865, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

Fig. 153.

CARVED HEAD USED IN THE T'Ō'-XUÎT DANCE.

Height, 9 inches.

IV A, No. 1348, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

When they come to a house, they open the door and invite the people, the women first, one of the inmates of the house prompting the speaker. When they call the names, they stand in the door and strike the threshold with their staffs.[1] After the women, the hā′mats'a is called, and then the other men, the quē′quts'a last. Then the speaker of these twelve men says,[2] "Is that all?" The people reply,[3] "That is all." Then they call a certain relative of the master of ceremonies who has the name Ts'ix·ä′xtōlsE'lās.[4] All the property given away by the master of ceremonies is given in honor of this relative, who consequently is of high rank. He or she receives this name anew every year. After the messengers have called the people by their winter names, they are not allowed to use their summer names again until the ceremonies are ended.

Fig. 154.

CARVED HEAD USED IN THE T'Ō′XUÎT DANCE.

Height, 11 inches.

IV A, No. 1349, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

By this time the people begin to arrange themselves in groups, which are divided according to sex and age. These take the place of the clans, as described before.

On the following morning before daylight, the same twelve men visit all the houses and call to everybody: "Don't sleep! Go and bathe in the sea. We are walking around again to call you."[5] The people rise and at once plunge into the sea, in order to clean themselves for the qap'ēk^{u} or assembly, which is the formal beginning of the winter ceremonial.

Then they go to the house of the master of ceremonies, which is called the assembly house.[6] The house has been prepared for this purpose. A heavy cedar plank has been laid along the rear wall of the house, and another one along each side. These are used for beating time. The door is surrounded by a ring of hemlock branches which is covered with eagle down, so that everyone who steps into the house must pass through it. When passing through it, the people turn to the left, step through it with the right foot first, and then turn again.

The members of the seal society[7] do not enter the house, but assemble in another house. During this day the people sing and make merry until after dark. Then the master of ceremonies rises and calls four officers to go and invite the seal society. These offices are hereditary, and the men who perform the ceremonies have certain names which

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[1] They say, Iaqoisēxai′ (follows the name).

[2] Lamaē wī′la?

[3] Laam wī′la.

[4] qa Ts'ix·ä′xtōlsE'lasai′.

[5] Wä qoā′La'sxä qa s g·īg·iLtā′lax·'itaōs. La'mEnōX qā''tsistaä′i.
Wä, don't sleep, go to roll in the water. We walk around back for you.

[6] Qāp'aya′tsē.

[7] Mē′emqoat.

belong to the offices: X·ī′x·iqala, of the Guē′tela tribe; Q'ē′q'aqaualas, of the Walas Kwakiutl tribe; Lôxsâ′, of the Hā′ialik·auaē clan, and Ā′LŌ'lsEla, of the Q'ō′moyuē tribe. The last is their leader. They are called pä′paxamē (head paxalas). One of these men must be a "paxala" (shaman). When starting each takes a round rattle. They blacken their faces, put on their head rings and neck rings of red cedar bark, and cover their heads with eagle down. Then their speaker, Ā′LŌ'lsEla, says, "We are going to fetch our friends."[1] Then they go around the fire four times, singing as follows:[2]

O friend, O friend, O supernatural friend (meaning Wīnā′lag·ilîs).

Then they go to the house in which the seal society is waiting for them. Meanwhile, the master of ceremonies calls up four other officers to invite the highest members of the seal society, the hā′mats'as. These offices are also hereditary. The names of the officers are: K·ā′qauLēE, of the Kuē′xa tribe; Mē′goatExstāla, of the same tribe; K·ēx·, of the Maa′mtag·ila clan; and Nā′wulqalag·ilîs, of the Kuē′xa tribe. The first three names are quē′qutsa names, the last is a ha′mshamts'Es name. He is the leader of these four messengers. They are also called pä′paxamē (head paxala), and there must be one "paxala" (shaman) among them.

The master of ceremonies gives them tallow. The ha′mshamts'Es puts some of it into his mouth, chews it, and then rubs it all over his face, while the others simply rub it on their faces without chewing. Each is also given a cedar bark ring, charcoal, feathers, and a round rattle. They all wear quē′qutsa rings. After they have received the ornaments, they say, "We will go and fetch our great friends."[3] They walk four times around the fire, singing:[4]

You said, Wīnā′lag·ilîs, that I should capsize in rough weather. Your friend stayed here long in my canoe near the beach. You said that I should capsize in rough weather, but your friend capsized sleeping while it was rough weather.[5]

Then they walk around the fire, go on their errand, and after about fifteen minutes the eight men who were sent to fetch the seal society and the hā′mat'sas return, and Ā′LŌ'lsEla sings:[6]

BaxbakuālanuXsī′waē told me about the great supernatural means of killing people with my teeth.

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[1] La'mEnōX lāL, pē′paxalai′, aXLExans nē′nEmōkua.
We go, shamans, we fetch our friends.

[2] Appendix, page 718.

[3] La'menōX lāL, pē′paxalai′, aXLExans nēnEmō′xtsē.
We go, shamans, we fetch our great friends.

[4] Appendix, page 719.

[5] This song refers to a man named Ēix·'ag·idā′lag·ilîs who met Wīnā′lag·ilîs. The latter asked him: "Are you a shaman?" He replied in the affirmative, and continued: "Can you cross here without upsetting your canoe?" "Yes," retorted Wīnā′lag·ilîs. "Then let me see," said the former. "If you suceeed, I will cross next." When Wīnā′lag·ilîs tried to cross, he capsized. Then Ēix·'ag·idā′lag·ilîs sang the above song. A translation is very difficult, and the sense is by no means certain.

[6] Appendix, page 720.

The four men who went to fetch the seal society enter first. Those who went to fetch the hā′mats'as follow them. Before they enter, the people who are assembled in the house clear their throats, as they are not allowed to cough or to laugh after the seal society have entered. When the messengers enter, Ā′Lo'lsEla says, "Our friends are coming."[1]

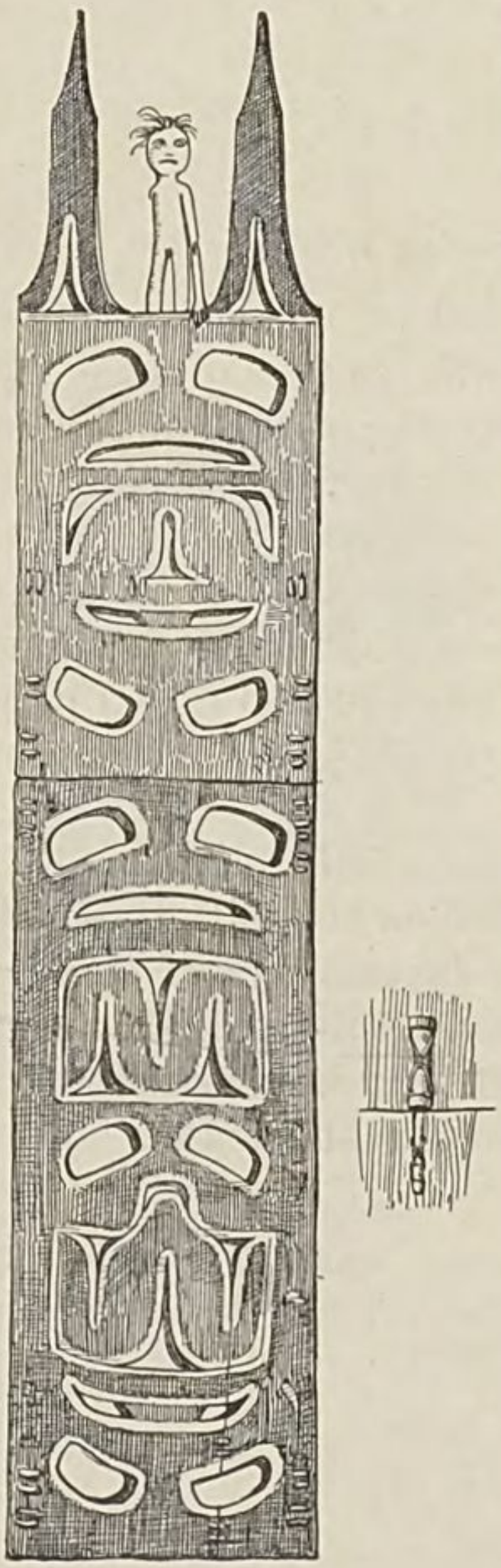

Fig. 155.

D'E′NTSÎQ.

Height, 7 feet; black, white.

IV A, No. 1129, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

Now Nāwulqā′lag·ilîs says, "Take care, our great friends are coming."[2]

Then the four men who called the seals sit down in the left-hand front corner of the house, the others in the right-hand front corner. Now everybody looks at the door where the fool dancers (nōō′nLEmaLa) enter first. They strike the door with their swords or lances, open it, and stand in the doorway. Their faces are blackened, they wear torn and soiled clothing. Their heads are strewed with eagle down. If anyone laughs or coughs, the fool dancer steps up to him and threatens him with his sword or lance. Then the fool dancers turn one by one, go to the right around the fire, and sit down on their seats. Their places are at both ends of those of the seal society, as they are the guards of the society. Then all the other members of the society enter, each group by themselves, and each dressed in their proper ornaments of red cedar bark. They stand in the doorway for a short time, and then go to their places, turning to the right and going around the fire. The hā′mats'as are the last to enter. They are preceded by the grizzly bear dancers, whose faces are blackened. They wear blankets, and bear claws on their hands. If there happens to be an odd number of these, one of their number goes to the rear of the house. The others remain at the door and look around among the assembly. Then they divide into two parts, forming two rows, one on each side of the door. Now the hā′mats'as enter and pass between the two rows of bear dancers, which close behind. The hā′mats'as step up to the fire and, standing side by side, face the rear of the house. There they stand for about ten minutes, during which time nobody is allowed to move. Then the master of ceremonies rises and makes a speech in a very low voice, in which he warns the people to be careful and not to offend the hā′mats'as. The latter turn to the right and walk slowly to the rear

[1] G·ā′x'am g·îns nēnEmō′kuiX, pēpaxalai′.

[2] Wē, q'ā′qamēLax, pēpaxalai′ g·ā′x'am g·în nēnEmōktsēk·.

of the house, holding their blankets in a fold over their arms, which are held at some distance from their chest. If any one coughs after the hā′mats'as have entered, the bear steps up to him and threatens him. The offender must give a feast to the seal society; sometimes also to the quē′qutsa. The hā′mats'as sit down in the middle of the rear of the house. Next to them on both sides sit the bear dancers; next to these the other groups of the seal society. Then the master of ceremonies asks the four messengers who went to invite the members of the lower grades of the seal society to fetch tallow and white cedar bark. The four men rise together and Ā′LŌ'lsEla says: "We go to lift our grandfather from the floor."[1]

All the ceremonial objects which are acquired by inheritance are called "grandfather." They are kept in four boxes in the right-hand front corner of the house. When the men lift them, the ts'ā′eqa spirits enter them, making them hungry. This is expressed in their song, which they sing while walking around the fire and carrying the boxes containing the tallow and cedar bark:[2]

This is what makes us confused.

They carry these boxes four times around the fire and then stop in front of the hā′mats'as, to whom they give some tallow and cedar bark. They continue to distribute it, two men going to the right and two going to the left until they meet at the door.

Then the master of ceremonies calls the same messenger who went to fetch the hā′mats'as: "Come, friends, and lift from the floor your grandfather."[3]

They rise, walk around the fire four times, and, standing close to the door, the speaker says, "We are going, friends, to lift our grandfather,"[4] which means in this case the drum. Then they turn to the right and walk out of the house. After about ten minutes, they are heard to return singing, and enter holding each one corner of the drum. They sing:[5]

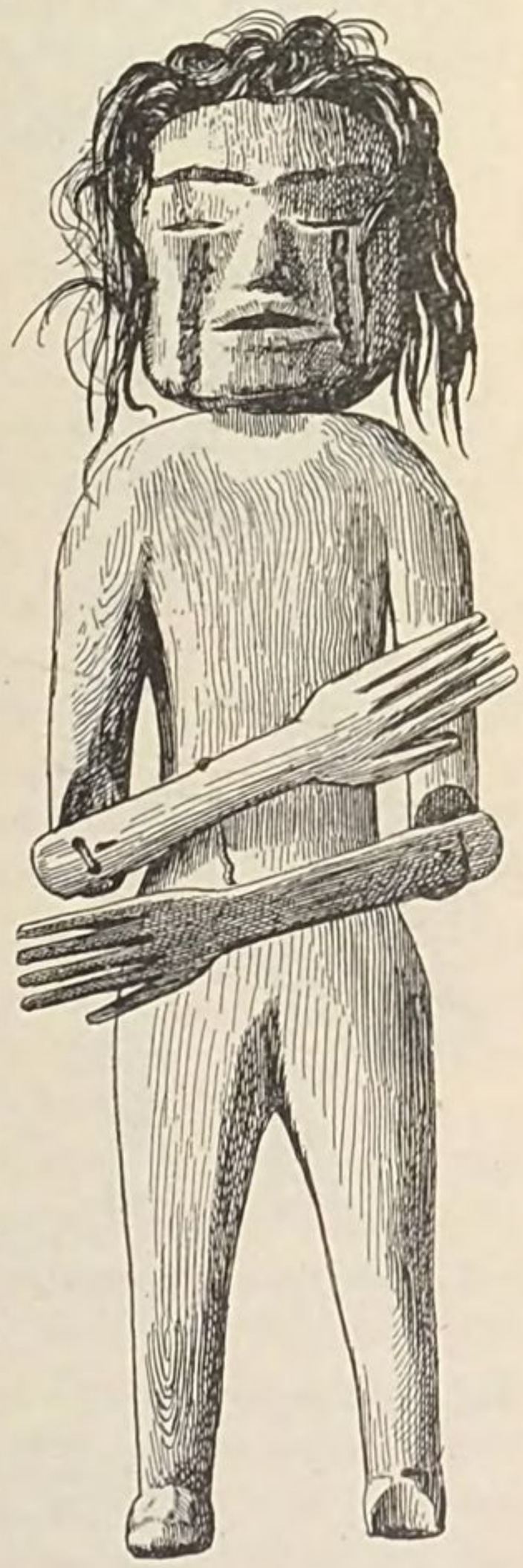

Fig. 156.

FIGURE REPRESENTING THE NŌ′NLEMG'ILA.

Height, 34½ inches.

IV A, No. 1031, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

BaxbakuālanuXsī′waē said he would make me go through his own house.

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[1] LāmEnōX lāL dāg·iliLāL g·anōX qa′qEmpk·a.

[2] Appendix, page 720.

[3] Qē′lag·a nēnEmō′kᵘ ēitalē′Lax qa s lāos lā′xis qā′qempdaôxoôs.
Come, friends, again off floor for go your to your grandfather.

[4] La'menōx lāL nēnEmō′kᵘ qa g·ā′xlag·īsEns qā′qemp.

[5] Appendix, page 721.

They remain standing near the doorway, then turn to the right and go four times around the fire, and put down the drum. As soon as they do so, the small (ts'ē'tsaēqa) winter dance whistles are heard to blow. The men say, "That is a good sign for us, friends."[1]

The master of ceremonies next calls the four men who called the seal society, saying, "Come, friends, go and fetch our batons."[2] They do not reply, but begin to sing their secret song, going around the fire four times and swinging their rattles:[3]

I am the only one who owns the winter dance.

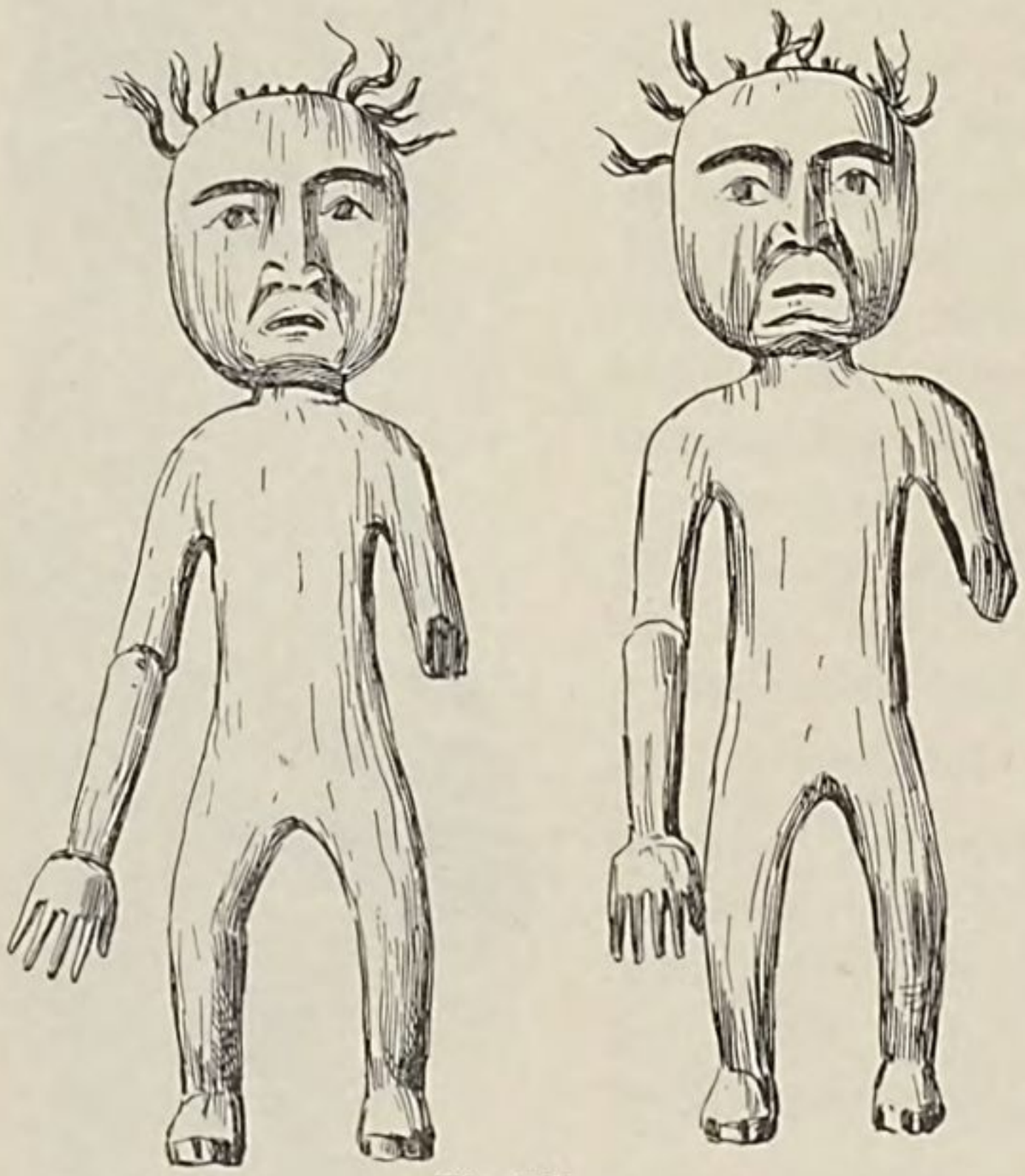

Fig. 157.
FIGURES REPRESENTING A PAIR OF NŌ'NLEMG·ILA.
Cat. No. 129512, U. S. N. M. Collected by F. Boas.

They walk out of the house and continue to sing until they come back, carrying the batons on their left arms. They go around the fire and put the batons down in front of the people, beginning with the hā'mats'as, and continuing on both sides until they reach those who sit nearest the door.

Then the master of ceremonies calls upon the four men who fetched the hā'mats'as, saying, "Come, friends, take up our red cedar bark here."[4] They rise, and their speaker replies in a low voice, "Now I am going to take up this red cedar bark, your great real friend."[5] They all sing together:[6]

BaxbakuālanuXsī'waē made me a winter dancer.
BaxbakuālanuXsī'waē made me pure.
I do not destroy life, I am the life maker.[7]

Then they walk out singing, and come back singing the same song and carrying the red cedar bark under their left arms. They bring it in a long bunch, about 12 feet in length and more than a foot thick. One man carries it in front, two in the middle, one at the end. They carry their rattles in their right hands. On entering, they turn round

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[1] HaiLaxālilXōLEns nēnEmō'kᵘ.
[2] Qē'laXdaôX la'g·a nēnEmō'kᵘ qans t'a'miayuLa.
[3] Appendix, page 721.
[4] Qē'lag·a nēnEmō'kᵘ dā'g·iliLax xg·ins L'ā'qaquk·.
[5] Ēismaē'iLEn dā'g·iliLax g·as L'ā'qaq g·aōs nēnEmōxtsēk·as.
[6] Appendix, page 722.
[7] This song is also used by the pa'xalas in their incantations.

together so that the cedar bark makes a full turn, go round the fire to the right, and turn again in the rear of the fire. Thus they go around the fire four times. They stop in the right-hand front corner of the house.

The master of ceremonies now proceeds to prepare the floor of the house for the ceremonies, or "to put the nauālak into the floor." He gives slow jerks downward with his round rattle, saying with each movement, "ōp," and stooping down to the floor. This is the song of Hai'alik·auaē, the first shaman. Thus he goes around the fire once, and then he sings his secret song:[1]

Fig. 158.

FIGURE, WITH MOVABLE ARMS AND A BIRD SITTING ON ITS HEAD, REPRESENTING THE NŌ'NLEMG·ILA.

From a sketch made at the World's Columbian Exposition.

1. My mind is not strong enough (to lift it).
2. My mind is afraid of it.[2]
3. I have seen the winter ceremonial.

After he has finished his song, Nā'wulqalag·ilis stretches his hand backward, and somebody puts, unnoticed, a knife into it. This he gives to the master of ceremonies, who steps up to the four men who hold the cedar bark. Three times he pretends to cut it, and after each cut makes one turn to the left. The fourth time he really cuts through it, and at the same time the sound of whistles is heard proceeding from the cedar bark. After it is cut, the master of ceremonies distributes it, giving the hā'mats'as first their part, then to the other members of the seal society, and finally to the quē'qutsa.

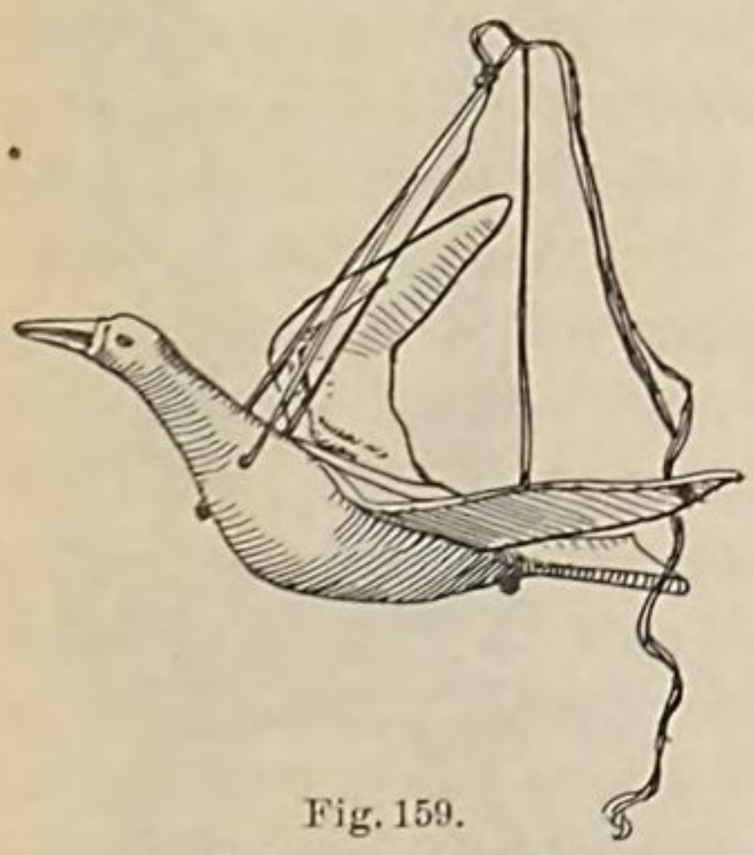

Fig. 159.

BIRD OF NŌ'NLEMG·ILA.

Length, 13½ inches.

IV A, No. 1129[1], Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

He then calls to the men who brought the members of the seal society, "Bring us our down, friends."[3] They then bring the dishes, each man carrying one dish. Then he sends them in the same way to bring the tallow. After he has received all the dishes, he calls up the four men again and sends them to all the people who are assembled in the house, in order to ask if there is anyone who desires to join in the celebration of the winter dance—that is to say, if there is another man ready to act as yē'wix·ila during the same ceremonial. He asks, "Who is the one to whom the seal society will go?"[4]

The notice in the beginning of the festival is given in order to enable

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[1] Appendix, page 723.

[2] Meaning the cedar bark ornaments, in which the power of the winter ceremonial is vested.

[3] G·ā'xlax·îns qa'mxuaLaEns nēnEmō'kᵘ.

[4] A'nguēla ä'ita lawultsānEmLa'sa lē laēnēnōkᵘ.

the people to get ready for a yē′wix·ila. The celebration is not considered perfect unless a number of men—among the Kwakiutl one of each tribe—act as yē′wix·ila in the same ceremonial. When a man expresses his readiness to join, the people go to his house after the qap'ē′kᵘ. Then one of the relatives of the second yē′wix·ila is taken to Wīnā′lag·ilis by the hā′mats'a, as will be described later on. There are as many feasts that day as there are new yē′wix·ila.

Fig. 160.

HEAD OF NŌ′NLEMG·ILA.

Height, 10½ inches.

IV A, No. 6892, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

To return to the qap'ē′kᵘ. The master of ceremonies takes one of the dishes with feathers and, singing his secret song,—

1. My mind is not strong enough,
2. My mind is afraid of it,
3. I have seen the winter ceremonial,[1]—

goes around the fire four times, followed by the four men, who carry the dishes with down. In the rear and in the front of the fire they all turn once. Then the master of ceremonies returns the dish to the four men and orders them to distribute the feathers: "Go and feather our great friends."[2]

The men begin again with the hā′mats'a and feather the heads of the people, beginning in the middle and proceeding toward both ends. Then they distribute tallow and batons in the same way.

Now the master of ceremonies puts on his head ring, which consists of a flat strip of cedar bark, to which a long trail of the same material is attached. Again he sings his secret song and goes around the fire four times swinging the rattle, which he holds approximately at the height of his head. During this song the people bend their heads down and move on their seats in order to gain a convenient position. They hold their batons ready for use. After the master of ceremonies has gone around the fire four times, he stops in front of the hā′mats'as and says "wai, wai," at the same time thrusting his rattle forward. At this signal the people look up and begin to beat the boards for about ten minutes, during which time the master of ceremonies shakes his rattle.

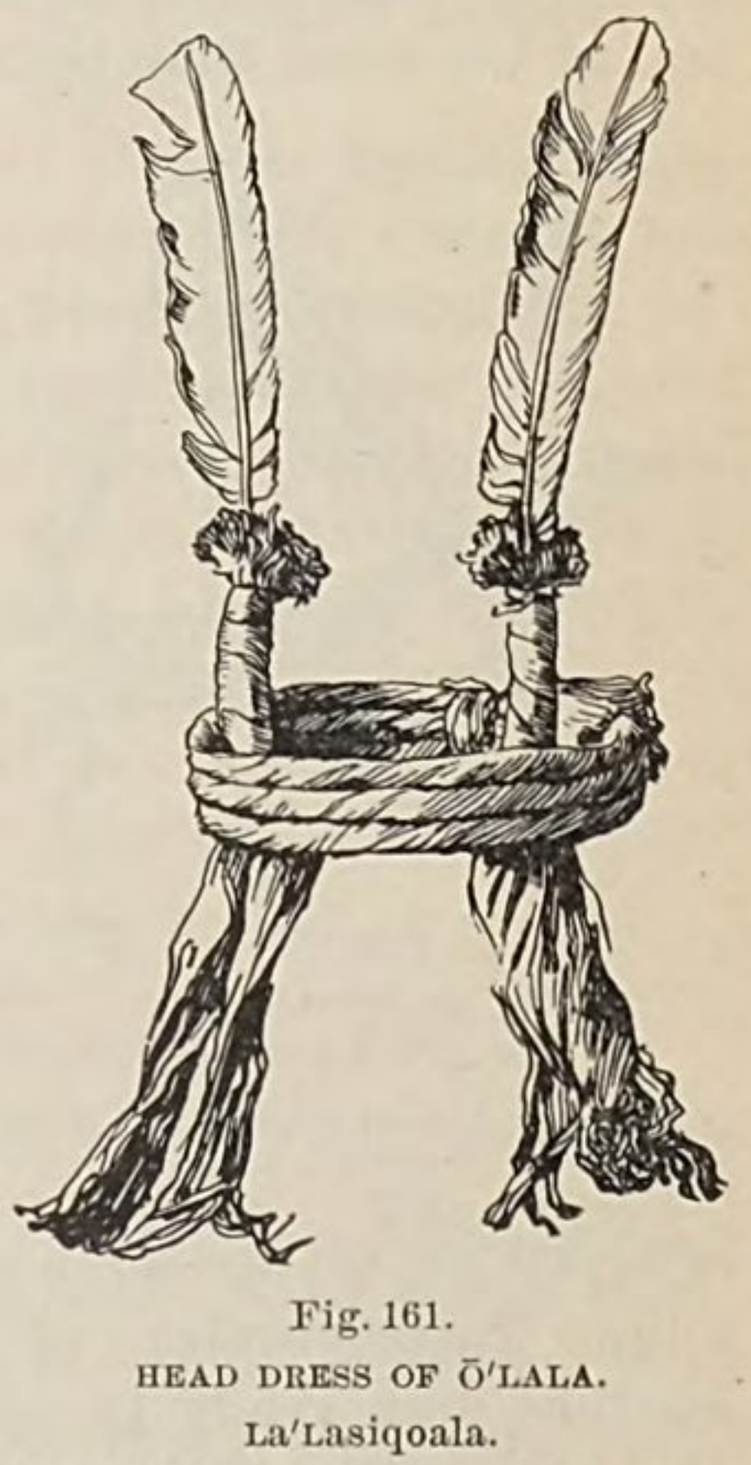

Fig. 161.

HEAD DRESS OF Ō′LALA.

La′Lasiqoala.

IV A, No. 6871, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

[1] See page 509.

[2] Hā′g·a qa′mx'uit xans nēnEmō′Xtsē.

Then he swings the rattle in a wide circle, thus giving a signal for the people to stop. During the following minutes not a sound is heard except from the shamans, who utter from time to time the sound "h, h," deep from the throat. This means that they are watching to see if the people make a mistake or transgress any of the rules. After about ten minutes the master of ceremonies gives a new signal for the people to beat the boards. After ten minutes more they stop again. Then everyone

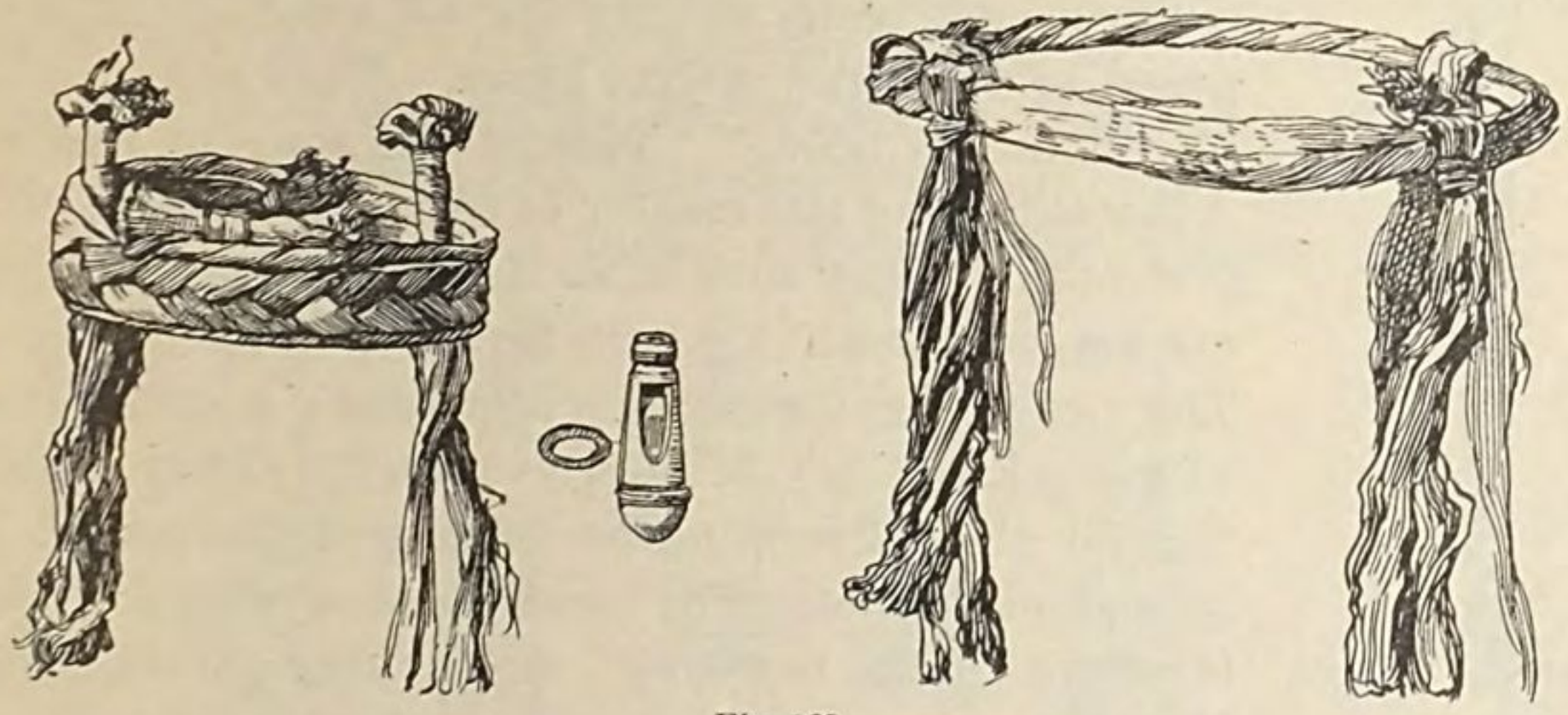

Fig. 162.

HEAD RING, NECK RING, AND WHISTLE OF TS'Ē'K'OÎS.

IV A, Nos. 6860 and 6861, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

begins to sing his own secret song, all at the same time, which is a sign that the spirit of the winter dance has entered the house. Then all the quē'qutsa divide according to their societies.

After this the master of ceremonies gives another signal and all the men begin to beat the boards again as hard as possible and at the same time the bear dancers utter their cries. The fool dancers are heard to cry "wai! hai! hai!" throwing stones and swinging their swords and lances at the same time. The master of ceremonies gives a new signal, and all the people stop at once beating the boards. Then the bear dancers and fool dancers look down, and all the quē'qutsa sing again each their own secret song. When the master of ceremonies gives the fourth signal for beating the boards, the whistles of the hā'mats'as are heard in the house. Then all the hā'mats'as, bears, and fool dancers rise and drive the people before them. While they are doing so they take hold of a child of the second yē'wix·ila; the child drops his cedar bark ornaments and blankets and disappears in the woods. Then the members of the seal society go out of the house followed by the people. Now the second yē'wix·ila cleans his house and invites all the people to enter. He puts down boards in front of the people and distributes

Fig. 163.

HEAD RING OF SĪ'LÎS.

Front and rear views.

IV A, No. 6873, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

batons among them. At the same time trumpet whistles are heard to blow in his bedroom. When the people have assembled in his house, the master of ceremonies says, "Let us try, friends, to drive away the supernatural being. He has carried away enough of our number."[1]

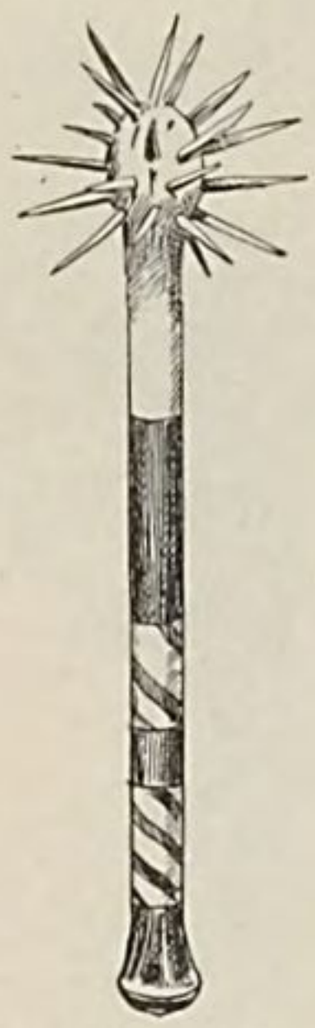

Fig. 164.

WEAPON OF Ā'MLALA.

From a sketch made at the World's Columbian Exposition.

The people reply, "Come, friend, no one is stronger in supernatural power than you are."[2] Then all the other men say one after the other, "Let us go on the floor and beat time."[3] Then they all (men, women, and children) get ready to sing the old song which is supposed to drive the spirits away. They cry "ye heee hu hu hu ye heee!" This is the song of the wolf. After this song the master of ceremonies says, "That is wrong."[4] Now they utter the bear's cry: "Hamama ma ma, hamamai." Again he says, "That is wrong." The people next utter Hai'alik·auaē's sound, "wô·ip kf wô-ip kf wô-ip" (kf blown upward). They continue this for about five minutes. The whistles continue to blow, and the master of ceremonies says again, "That is wrong! That is wrong! Let us sing another song." Now they sing "wōi, wōi, wōi," which is also Hai'alik·auaē's song. After this song the whistles stop, and at the order of the master of ceremonies they sing the first song of the winter dance:[5]

Wō, wō, ai, a, ai, really tormenting, ai, ai really tormenting.

Just before the end, the master of ceremonies joins the chorus, crying "ō hu," and all the people shout "wā!" hitting the boards together, which is believed to be a means of driving away the spirits. This song is sung four times. Then the speaker of the second yē'wix·ila says: "Friends, be happy. I received the name ——— from the supernatural being."[6]

Then all the people reply: "You received your great name from the supernatural being."[7] After this the speaker continues, saying that the people ought to be glad to hear the old songs and to have seen the

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[1] Wē'g·a x·îns gwa'nx·'ita, nē'nEmōk^{u}, la'mEns hē'L'ōLas yisōx nā'walakuēx,
Let us try, friends, we he has enough this naualak.
La mē'sEns wēg·iLtsEns qā'qEmp.
We will try our grandfather.

[2] Wē'g·a, adē', wē'g·a qāstē' nau'alakoaqâlasōs.

[3] Wē'g·a hai'g·iliL la a'ma.

[4] La'mē LĒ'qoa.

[5] Appendix, page 723.

[6] Wa nēnEmō'k^{u}! â'lag·a ama x·ī aik·ē's nē'nôqēx·daôx. Nō'gua am ———
Wa, friends! Only be happy your hearts. I am ———
g·ā'g·ax'as nau'alak^{u}.
coming from naualak^{u}.

[7] Sōtsäēl g·ā'g·ax'as nau'alak^{u}. La'mē q'ā'palōL.
You great coming from naualak. It hit you.

red cedar bark, and says, "Let us tame our friends, else we can not eat in peace.[1] Then the people sing the song which is supposed to tame the nū'LmaL and the bears.[2]

1. Great is the fury of these great supernatural ones.
2. He will carry men on his arms and torment them.
3. He will devour them skin and bones, crushing flesh and bone with his teeth.

After the song the yē'wix·ila makes another speech, and promises to give a feast early the next morning, saying: "Friends, how beautiful have I been made by the supernatural being. I shall give dried salmon for all of us and for our women."[3] And all reply "wâ, wâ." Early the next morning he calls the people into his house. They take their seats, and are first given a meal of dried salmon and grease

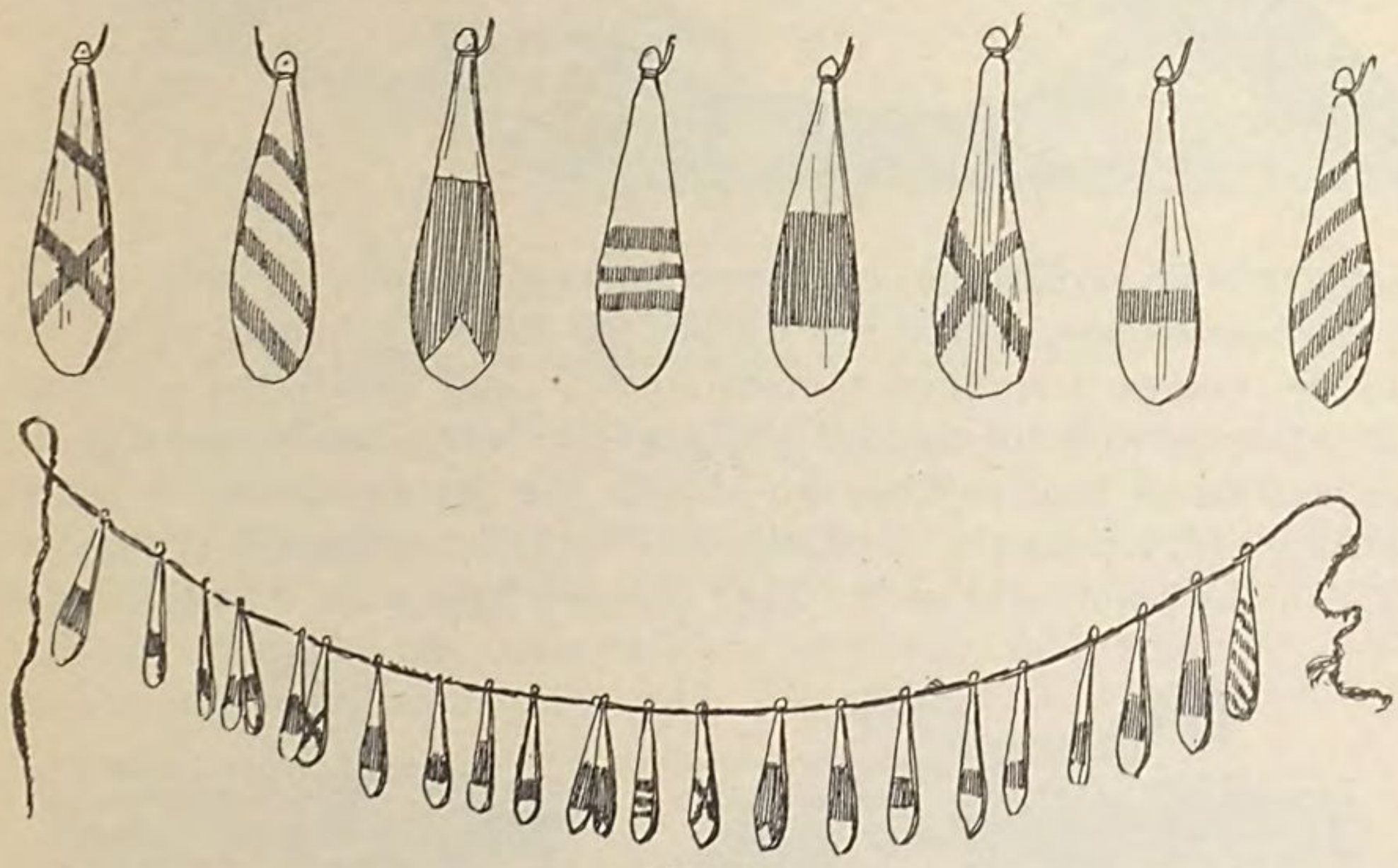

Fig. 165.

SMALL SLABS OF WOOD WHICH ARE SEWED TO THE BODY OF THE HAWĪ'NALAL.

Length, 4 feet; each slab, 4 inches.

IV A, No. 869, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

(ts'ā'g·isa = to lay foundation in belly). They sing four songs for the first course,—hā'mats'a songs if the child of the yē'wix·ila is to become a hā'mats'a. After that they are given dried berries (hē'iLg·anEm = making good on top of salmon). Four more songs are sung for this course. Then the second yē'wix·ila says: "Friends, this is the way

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[1] Wēg·a x·îns yō'L'it lax g·îns nēnEmō'kua, ā'LEns k·'ēs lax nā'qamEnsElā lax
Go on! We tame then our friends, else we not swallow straight
ha'mā'p lax.
this food.

[2] Appendix, page 706. See also page 471.

[3] Wa, nēnEmō'k^{u}! L'Etō'wēst'a g·ā'x'asas nau'alakua. T'ē'Lalasa
Wa, friends! how nice I am he came to me naualak. Dry salmon soaked in water
qasäi nēnEmōkuä'i; nāXuaLaamLEnsä'i La'wuns aLē'k·ilaxä.
for friends; all of us and our those in back (women).

we always do; please, friends, pay the small debts which are due me and refund the amount I gave for my wife. That is all."[1]

In this feast he gives a new name to his relative who had been taken away by the hā′mats'a. On the same day the people, who are divided according to the societies enumerated above, go to every house, and keep on feasting and singing until morning.

During this time the hā′mats'as are in a state of excitement, and occasionally bite some of the people. On the following morning the

Fig. 166.

NECK RING OF HAWĪ′NALAL.

Cat. No. 129989, U. S. N. M.

first yē′wix·ila invites the people to a feast. He sends the maa′mx'ēnox as his messengers, who dress up and go to every house, where they call the women first, then the seal society, and finally the quē′qutsa. After they have gone through the whole village, the d'ō′d'opa (p. 419) are sent to go to every house to invite the people again.[2] Next the LaLaLg·ū (?) repeat the invitation. When they come back, they say, "No one took notice of us."[3] Then the yē′wix·ila says "I will send the

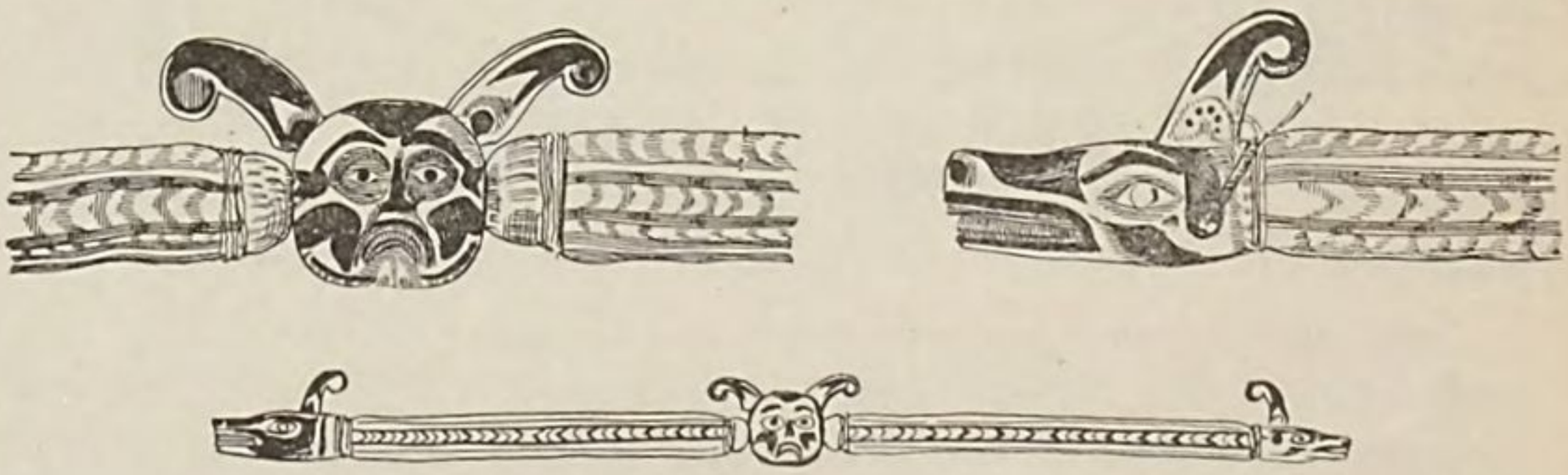

Fig. 167.

BELT OF SĪ′SIUL.

Length, 5 feet.

Royal Ethnographical Museum, Berlin.

Koskimo."[4] They dress and tie their blankets high up so that they do not quite reach to their knees, leaving the right arm and shoulder free, the blanket being thrown over the left shoulder. They blacken their

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[1] Wa nēnEmō′kᵘ haēq'ā′maāxs ẍoē′k·' alāsē. Lāxdaôx Ems nēnEmō′kᵘ
Friends, that is the way we always do, speaking You friends

waax'aiLasEn g·ā′g·imêōL Lawun ts'ā′ts'ōmayôen qa En qEnE′m; häimēqä′i.
please pay my small debts and my what I gave for wife small my wife; that is all.

[2] Calling in the door of each house: Ētsēstaai′.

[3] K·'ē'tsEmEnōX q'ā′tsEya.
No one us take notice.

[4] Lā′lax·a Qō′qôskīmuX.

faces, take their staffs (quē′sp'ēq) and call in a loud voice, striking the walls of the houses with their staffs, "The Koskimo want to eat."[1] They walk through the village, driving the people before them with their staffs, until they reach the house of the yē′wix·ila.

As soon as all the quē′qutsa have assembled there, the master of ceremonies rises and asks if they are all in the house.[2] He sends one man out to see, saying "Go and see."[3] The messengers return and

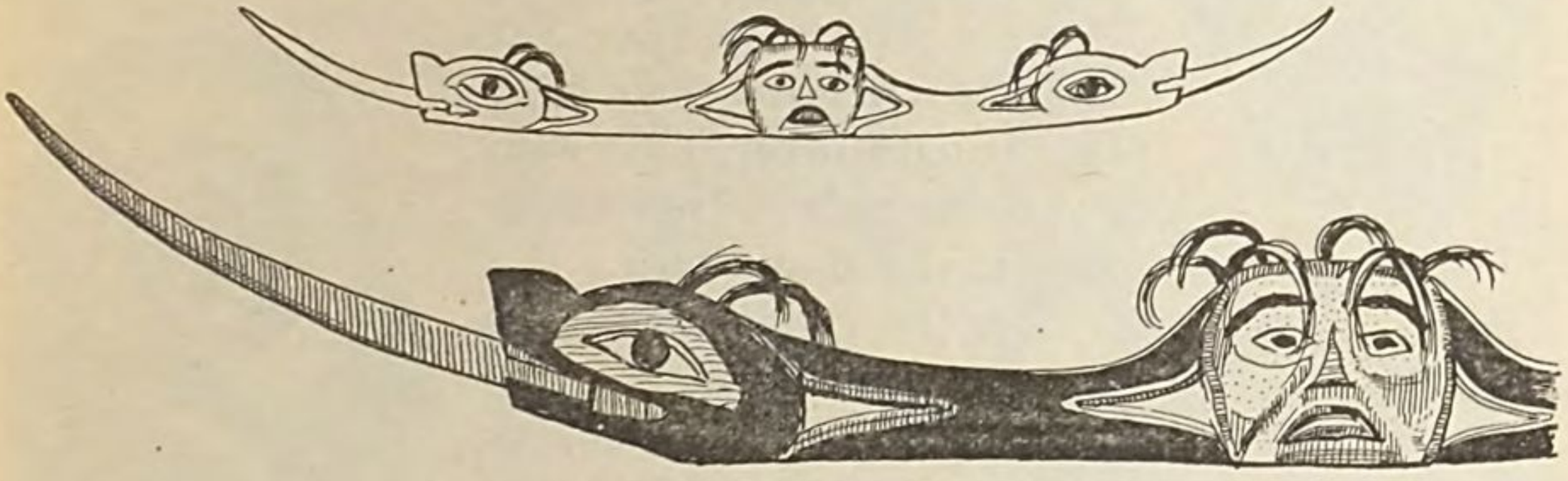

Fig. 168.

KNIFE OF HAWĪ′NALAL, REPRESENTING THE SĪ′SIUL.

Length, 5 feet, 3 inches; white, red.

IV A, No. 874, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

some will say, "They are not all here," referring to the absence of the seal society, while others will say, "Don't let them come, else we shall be troubled."[4] The people reply, "Lock the door against them,"[5] and they send the chief of the Koskimo, the Qoē′samē (chief quē′qutsa), to shut the door. After he has done so he returns, and the people say, "Are you not afraid of the hā′mats'as?" He says, "No, why should I be

Fig. 169.

KNIFE OF HAWĪ′NALAL, REPRESENTING THE SĪ′SIUL.

Length, 24½ inches.

IV A, No. 558, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

afraid of them?"[6] But as soon as he has said this, all the hā′mats'as are heard on the roof of the house, and the people cry, "Let us go out."[7]

---

[1]Sā L'E′nk·a g·ā′nem Lasg·a Qō′qôskimoxuik·.
Ah, satiated will be these Koskimo here.

[2]Laxdaôxmaans wēlaēL?
Are we in house?

[3]Hā′g·a dō′ X'uit.

[4]Qoā′L tsâ sīg·ā′xa, ā′LEns q'ē′q'aēqalala.

[5]Lānek·ō xLēlag·aqē′.

[6]Aisas k·î′LEla sa mē′emqoat? K·ē′sEn; or: mā′tsEnlēiLa g·iLElaL'Es?
Are you not afraid of seals? Not I, or, Why should I afraid of them?

[7]Wai′g·a x·îns hauqau'Elsa.
Let us go out.

They rush to the door, but as soon as it opens the bears and fool dancers come in and prevent them from leaving the house. The people ask each other where these people came from,[1] or, "You ugly thing, where did you come from?"[2] and try to hit their noses with sticks. The bears wear head rings of red and white cedar bark. Their faces are painted black, showing an enormous mouth set with teeth and stretching from ear to ear. They have bear's claws on their hands. The fool dancers have their faces blackened all over. They wear red cedar bark. Their clothing is ragged and torn.

Fig. 170.

MASK OF XOĀ'ĒXOĒ.

From a sketch made at the World's Columbian Exposition.

Now the people say, "Let us drive them out!"[3] As soon as they try to do so, the hā'mats'as jump down from the roof and drive the people before them. The bears and fool dancers get excited at the same time, and finally drive the people out of the house and down to the beach. The hā'mats'as, bears, and fool dancers pursue them. At last they drive them into the sea and keep them standing in the water until they promise them the best food they have in their house. Then the seal society return to the lō'bEk[u] or the house of the first yē'wix·ila, while the quē'qutsa enter the house of the second yē'wix·ila.

Fig. 171.

MASK OF XOĀ'ĒXOĒ.

Height, 12½ inches.

IV A, No. 420, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

Here the men take their seats according to the societies to which they belong. When they are giving a feast here, they send four dishes of each course to the hā'mats'a. This is called making the hā'mats'a eat first.[4] The food is carried to the hā'mats'a by four messengers, who are what is called qoē'tsē'sta; that means people who were seals, and try to become quē'qutsa. They alone are allowed to enter the lō'bEk[u].

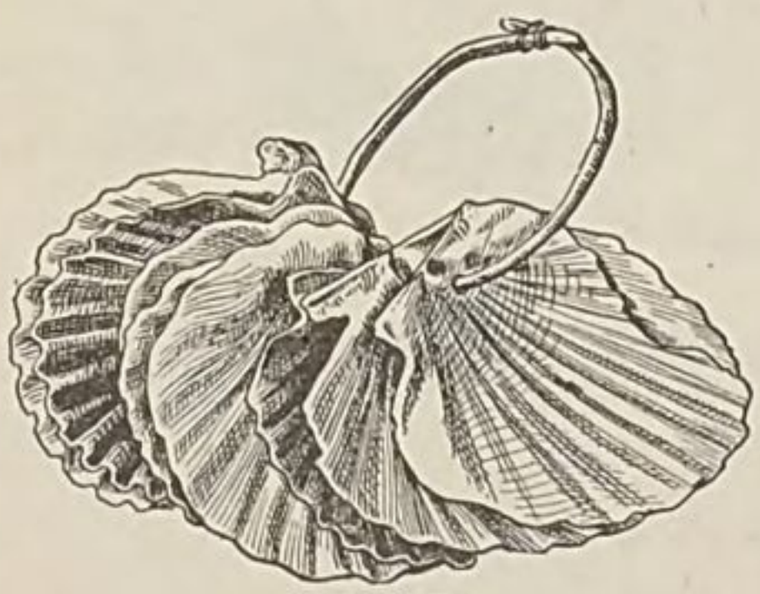

Fig. 172.

RATTLE OF XOĀ'ĒXOĒ.

IV A, No. 1838, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

The people are not allowed to eat until these messengers come back and report that the hā'mats'as have eaten. If anybody desires to give a feast, he announces this by calling upon one of his children to dance a winter dance, and says, "Come, my

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[1] MainōXtsōX?

[2] Wī'tsEs tsōL tsâs.

[3] Waig·a x·îns k·ā'yuwulsôq.
Let us drive them out.

[4] G·îlq'asāmas laxa hā'mats'a.

children; come to the fire, that you may help the people swallow their food by your dancing."[1]

If in any of these speeches a man should use a bā'xus (profane) name of a person, all the people cry out at once, and he must sit down. He may even be punished by the fool dancers.

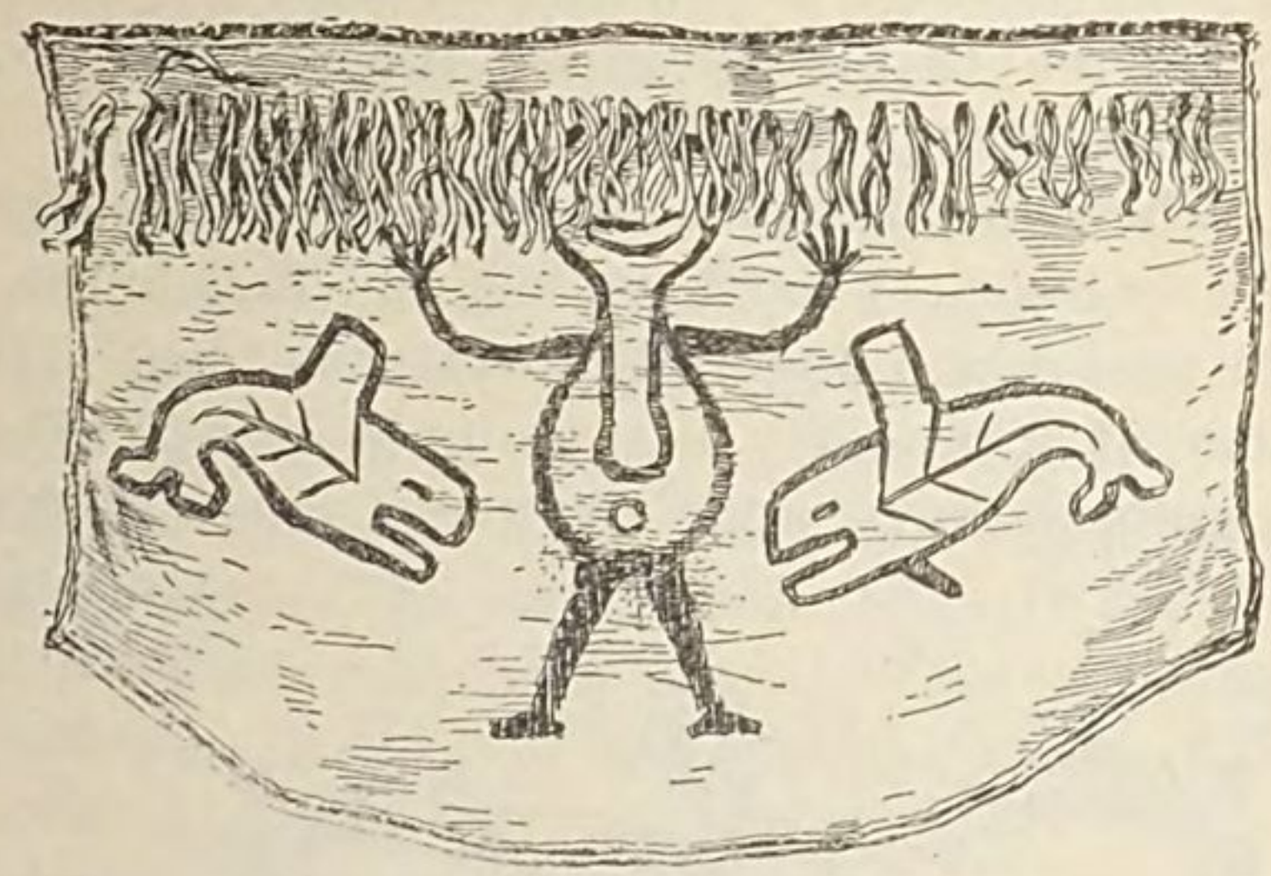

Fig. 173.

CEDAR BARK BLANKET OF HAI'ALIK·AUAĒ, SHOWING HAI'ALIK·AUAĒ AND TWO KILLER WHALES, PAINTED IN RED.

Cat. No. 175487, U. S. N. M. Collected by F. Boas.

The promised feast is given in the evening. The host sends the maa'mx'ēnôx to call the people to come to his house on the following morning. They rise early and go in a body from house to house calling everybody until all the people are assembled in the house of the second yē'wix·ila. The host sends the same four messengers with four dishes of each course to the seal society or ts'ā'ts'aqamtsEn (i. e., the ts'ē'ts'aeqa people), and the people ask him to send them quickly that all may get their food.[2] The host sends four of the Koskimo with the food.

Fig. 174.

FIRST HEAD RING OF HAI'ALIK·AUAĒ.

The crosspieces on top of the ring are worn at the sides of the head, and represent the heads of the sī'siuL.

Cat. No. 175488, U. S. N. M. Collected by F. Boas.

The hā'mats'as will keep these messengers waiting for hours to tease the people. Then four more Koskimo are sent to see what the first four are doing, and finally they all come back and report that the seal society kept them, pretending that they had stolen part of the food which they were sent to bring them. The people inquire if their master (g·ī'g·i), meaning the hā'mats'a, has eaten the food which was sent to him. When they hear that he has eaten, they begin to eat also. After the first course they sing four more songs, and send four dishes of the second course to the ts'ā'ts'aqamtsEn. They are not allowed to begin their

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[1] Qē'lag·a xōnō'k,[u] qē'lag·a (Goā'yuqulag·ilîs) L'āstāliLax qa s yî'xoa mEns'-
Come, child; come (Goā'yuqulag·ilîs), come to fire outside for to dance, swal-
ita-us sāx g·ins nēnEmō'kua.
lowing for our friends.

[2] Yix·ā'k·asla tsōx qaxg·anux pō'sq'ēk·.
Quick, for we hungry here.

meal until they have learned that the hā′mats'as have eaten. For the whole dancing season this rule must be adhered to.

During all this time the father-in-law of the first yē′wix·ila has been gathering all his property, principally food, blankets, boxes, dishes, spoons, kettles, bracelets, coppers, and box lids, in order to refund (qautē′x·a) to his son-in-law the amount promised at the marriage of his daughter (see p. 421).

When he assembles his clan to announce his plans, the members of the seal society must not come. This is the only time when the clans are recognized during the winter season. He informs the people what amount of property he is going to give to his son-in-law, what names he is going to have, and how many songs he has had made for him. The son-in-law assembles his clan in the dancing house (lōbEk^{u}), and lets them paint their faces with charcoal. Meanwhile the canoe of g·ī′sExstâla is built, as described on p. 422. All the speakers' staffs which are carried at the festival are ornamented with red cedar bark. The dances that are sung all belong to the winter dance, only hā′mats'a songs are not used. When the daughter of the father-in-law dances, she is also dressed in cedar bark ornaments. The description of the ceremonial will be found at the place referred to above (p. 421).

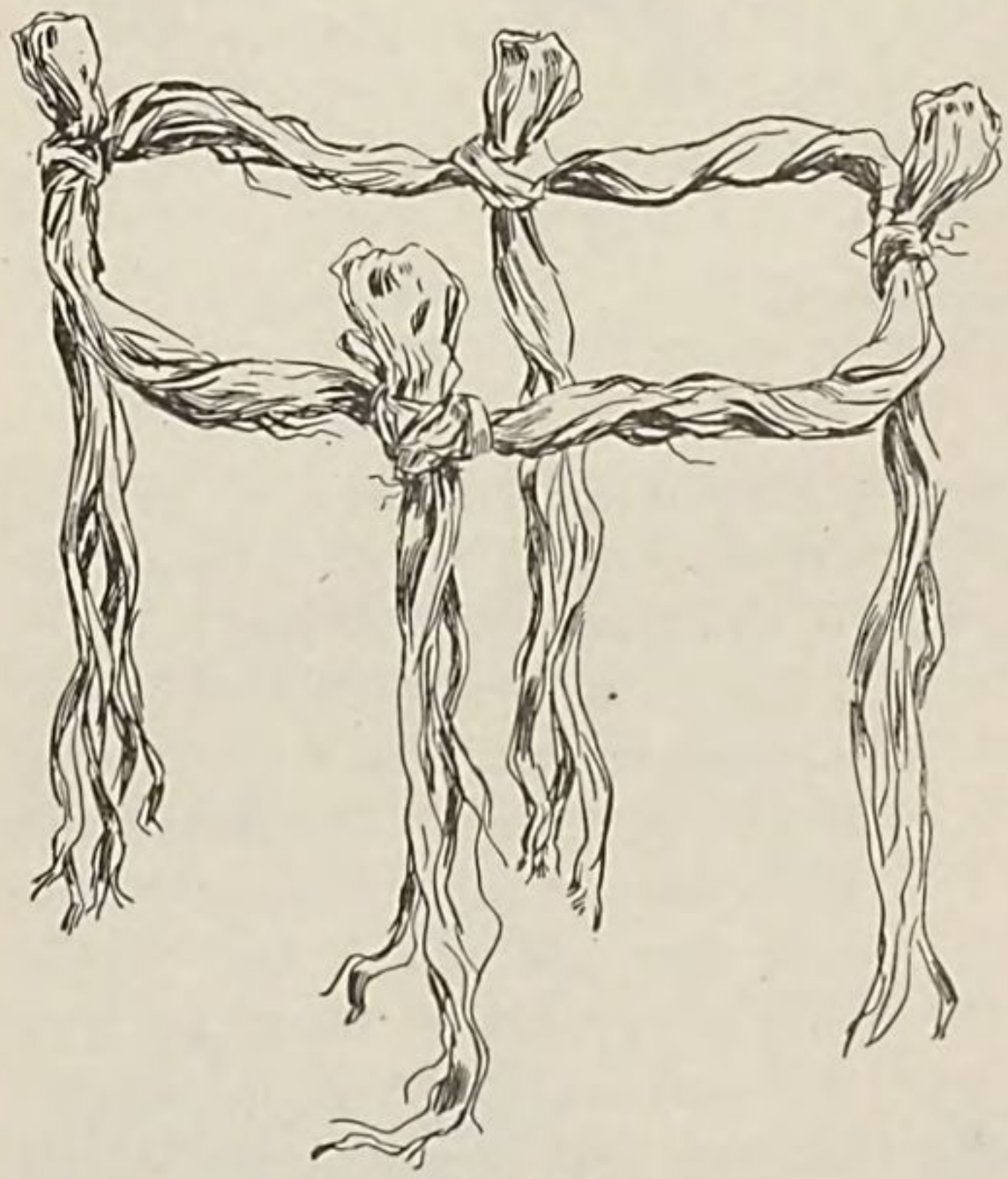


Fig. 175.

FIRST NECK RING OF HAI′ALIK·AUAĒ.

The four crosspieces indicate the powers of the shaman.

Cat. No. 175489, U. S. N. M. Collected by F. Boas.

After the whole amount of property has been turned over to the son-in-law, the father-in-law calls the master of ceremonies and, pointing to the box containing the winter dance implements—masks, whistles, and ornaments of red cedar bark—he says, "Come, I am afraid of this box here; you are the only one who is not afraid of it, because you went through the whole ceremonies of the winter dances.[1] To this the master of ceremonies, who carries a small cane, replies, "Let me go there. Yes, your word is good, friends.

---

[1] Qē′lag·a LE′m'wala, g·iLE′lEn Lās g·ada g·ildasêk· qaxs nEmō′Xmaā′qōs nā′la-
Come LE′m'wala, I am afraid of this box for you alone you not
qak· qa xs lāxsâēx lā′xoa L'ā′qaqnix·.
afraid of it for you went through it in the red cedar bark here.

It is good that you say I am the highest among you."[1] With this he lifts the box, hides it under his blanket, and begins to sing his secret song, as follows:[2]

O friend, O friend, O supernatural friend.

Then he calls the son-in-law, saying, "Stand up; it may be that this box is intended for you."[3] The young man rises and replies, "Hold it awhile until I dress up."[4] Then he goes to the house, and after a few minutes returns without blanket, having his face blackened. He presents himself to the master of ceremonies: "Here I am, friend;"[5] who asks him once more to be ready: "Go on, get ready, son-in-law."[6] Then he gives him the winter names which belong to the contents of the boxes. He receives both the mē'emqoat name and also the quē'qutsa name. He asks him to step near.[7] The young man turns to the left and walks slowly down to the beach where the master of ceremonies is standing. The latter takes his neck ring off and, holding it, sings his secret song:

1. My mind is not strong enough (to lift it).
2. My mind is afraid of it.
3. I have seen the winter ceremonial.[8]

Then he turns around and gives the young men the neck ring to which the arm rings and leg rings are tied. He turns again and takes off his head ring. The young man's wife, who stands next to the master of ceremonies, gives her dancing apron to the latter, who turns once and puts it onto her husband. Last of all, he gives him the box. Then the master of ceremonies says "hōp ōp" four times. (This is the sound of Hai'alik·auaē). The master of ceremonies continues:[9]

"Wait a while, son-in-law, you have no name for your k·î'nqalaLala, but I have seen what carried away our son. Her name is ———." With this he secretly puts a whistle into the hand of the son-in-law. The latter turns to the right and calls "h! h!" (deep from the throat).

---

[1] Ō lāL lax·in lāq, qä'Las aix·mēs wālDEmūs nēnEmō'k^{u}, wā'wiqumaā'xEn
O let me go there it is true good your word friends good that you pretend to place me highest

bEguā'nEmē'naē, Lā' lax·in lāq.
a man like me. I will go there.

[2] Appendix, page 718.

[3] Lā'xoala nEgu'mp, qō sō'Lax lā'laā laxs g·āda g·î'lt'as.
Stand up son-in-law may be for you going to this box.

[4] DāLa la g·aq, qan lē q'oā'lax·'it.
Hold it awhile, for me to go dress up.

[5] G·ā'xmen, qāst.

[6] Wē'g·a qoa'lsax nEgu'mp.

[7] Qē'lag·a nEgu'mp.

[8] See page 509.

[9] Lā'xoaLa'lag·åama's nEgō'mp, k·'eō'tsōEm k·în'qalaLElōs qa xg·in
Stand there a while son-in-law, you have no (name) for your kyinqalaLEla for I have
la'mēx· dō'x'oaLElā'x ax'ē'idē xEns xonō'kua. (Hē'ilig·îxstē'g·ilis LāLis lāx
seen what carried our child away. (Right maker of
Baxbakuālanuxsī'waē.)
Baxbakuālanuxsī'waē.)

He turns around to the left, stooping down, and walks in zigzag way up to the house. When he approaches the house, he cries "hāp! hāp!" and all the people of his clan gather the property which has been given him and follow him. As soon as he cries "hāp hāp," his son (the g·ī′yakila), who is in the woods, is heard to reply with the same sound. Now, four men of the yē′wix·ila's family go down to the square, carrying an ax, and split the box cover forming one corner of the square. This is called "sinking the canoe" (tsō′kunsa), and means that the son-in-law must distribute among the tribe everything he has received from his father-in-law.

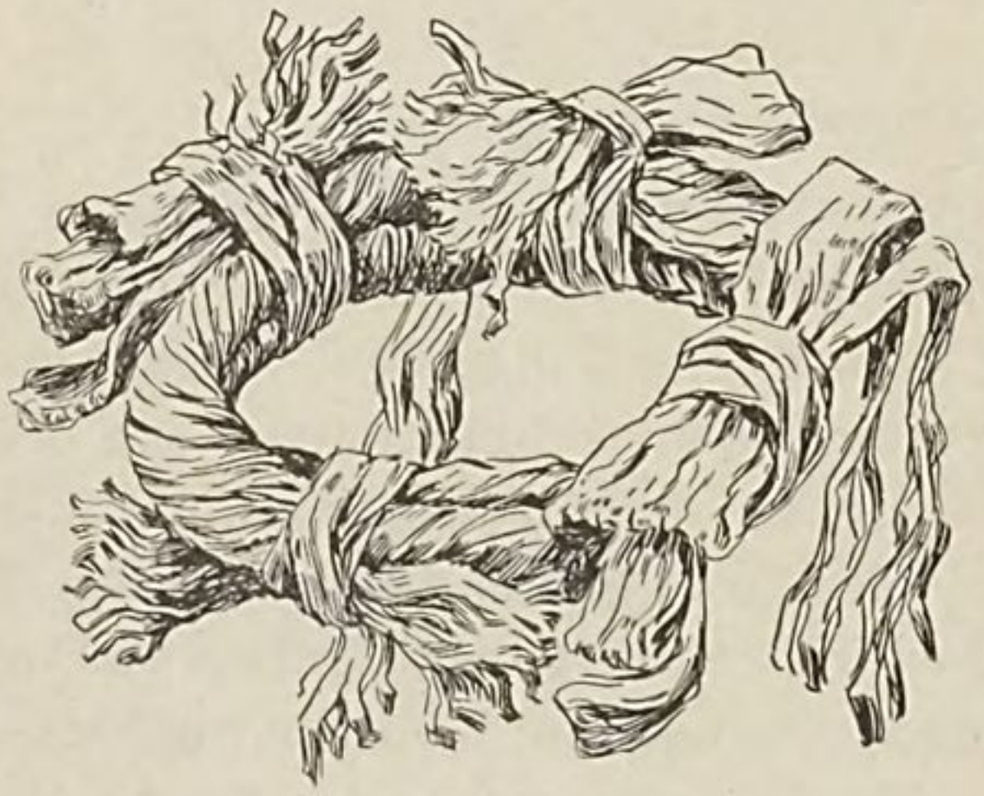


Fig. 176.

SECOND HEAD RING OF HAI′ALIK·AUAĒ.

Worn at the beginning of the fourth day after the return of the novice. The crosspieces indicate the powers of the shaman.

Cat. No. 175490, U. S. N. M. Collected by F. Boas.

When the people reach the house, the son-in-law gives them some food and gives notice that in four days he intends to try to bring his son back from the woods.[1] The next three days are spent in feasting and dancing. In the evening of the third day the young man calls all the people to go into the woods in order to make eight new songs for the hā′mats'a and two for the k·ī′nqalaʟala, the servant of the hā′mats'a. The singing master and his assistants go into the woods early in the morning, while the maa′mx'ēnôx go in the evening. The old chiefs go last, and sit by themselves. They give orders to the quē′qutsa, telling them what they have to do during the festival when the hā′mats'a is expected to come back.

While learning the songs the people sit promiscuously, not arranged according to the societies to which they belong. Those who have good voices sit near the singing master. They always select a certain clearing in the thicket for this purpose (Plate 43). No women are allowed there. The hā′mats'a and the k·ī′nqalaʟala who are in the woods listen

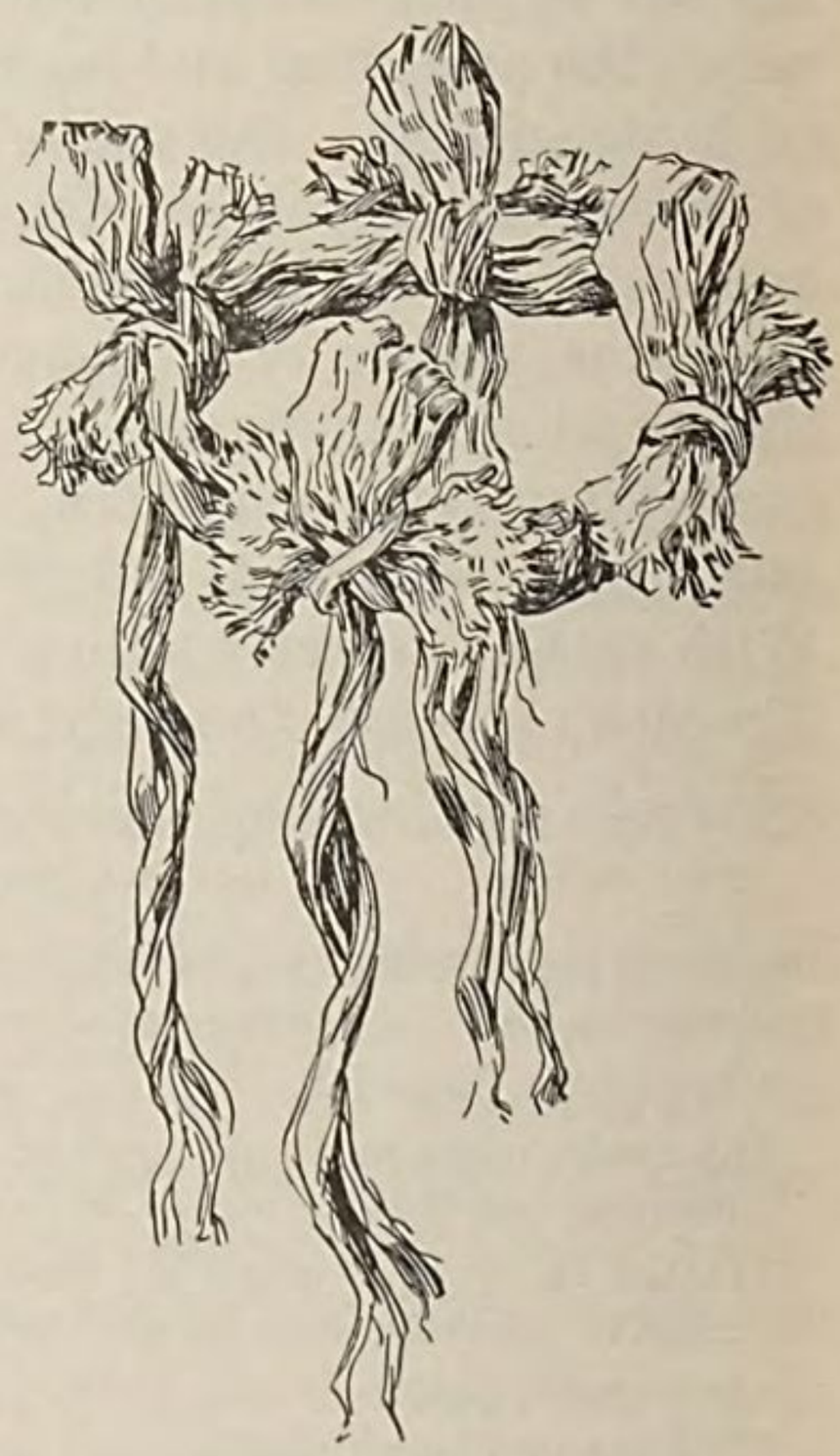


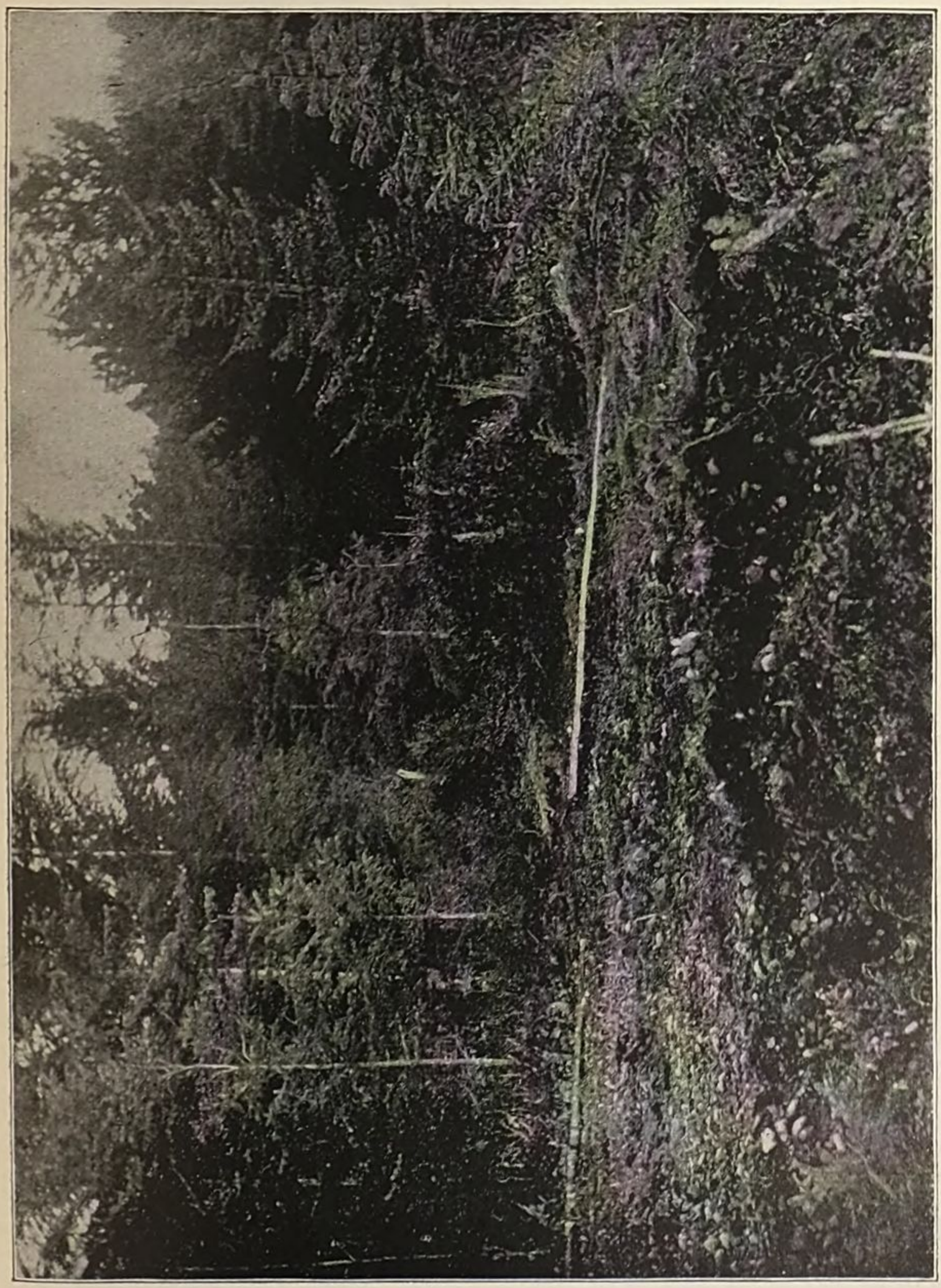
Fig. 177.

THIRD HEAD RING OF HAI′ALIK·AUAĒ.

The crosspieces indicate the powers of the shaman.

Cat. No. 175491, U. S. N. M. Collected by F. Boas.

[1] La mens gu′nx·'itel k·ik·ī′lnalaʟ.
We will try to bring him back.



PLACE WHERE THE SECRET MEETINGS OF THE WINTER CEREMONIAL ARE HELD.
From a photograph.

unseen to the songs, as they must dance to them when they first appear in the house. The people sit arranged in a square. At some distance from each corner a fool dancer is placed, to watch that no uninitiated person comes near. If, nevertheless, one of these should see what is going on he is captured by the fool dancer, taken into the square, and he is initiated.

After all have learned the new songs, they scatter and go home singly in order not to attract the attention of the other people. Each family takes supper alone, then they get ready for the dance. When it gets dark, the yē′wix·ila sends four messengers to invite the people to the dance. He gives each of these a button blanket, a head ring and a neck ring of red cedar bark, and eagle down to strew on their heads. They walk out of the house to one end of the village and go into the door of the last house, in order to invite the people. Each of them has a set speech. The first says, "Let us try shamans!" The second, "We shall try in vain to bring back what makes us remember our friends!" The third, "Bathe, G·'êpLalai! Bathe, Yaqoîsai′!" calling the names of dancers. The fourth, "Rise, friends!" also naming the dancers.[1]

Fig. 178.

FIRST HEAD RING OF HAI′ALIK·AUAĒ.

Nimkish.

The two lateral crosspieces represent the heads of the sī′siuL, and the front crosspiece the death bringer.

Cat. No. 175511, U. S. N. M. Collected by F. Boas.

In inviting the people, they begin with the women and mention the name of everybody living in the particular house, continuing with the names of the hā′mats'a and calling finally the names of the quē′qutsa. After the messengers have gone through the whole village, they return to the house of the yē′wix·ila saying: "We have been outside to the end of the village."[2]

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[1] The first man says: La mEns hēinax'alēLai′ pēpaxalai′.
We will try shamans.
The second says: La mEns wuL'alēLai′ nēnEmōkoai′ k·ik·î′lnala xEns q'ālaLElaai′.
We will try for nothing friends to bring back our what makes us remember.
The third says: La ams xōsēt'ēLai′ Gy·êpLalai. Laams xōsēt'ēLai′ Yaqoisai′.
Ready you bathe (woman's name). Ready bathe (Hā′mats'a name).
The fourth says: Laams Lāx'oēLai′ qāstai′ NāXdanai′.
Ready you rise friend One man eater.

[2] LamEnōX lā′pElsa.

Then the yē′wix·ila asks four other people to act as his messengers. Again he gives each a button blanket, a head ring and neck ring of red cedar bark, and eagle down for the head. They go to all the houses and invite the people to come at once. They go to each house and say, "Walk back."[1]

As soon as the people begin to enter the house, the yē′wix·ila beats time on a board, in quick measures, concluding with a sharp rap and the call, "hai, hai."

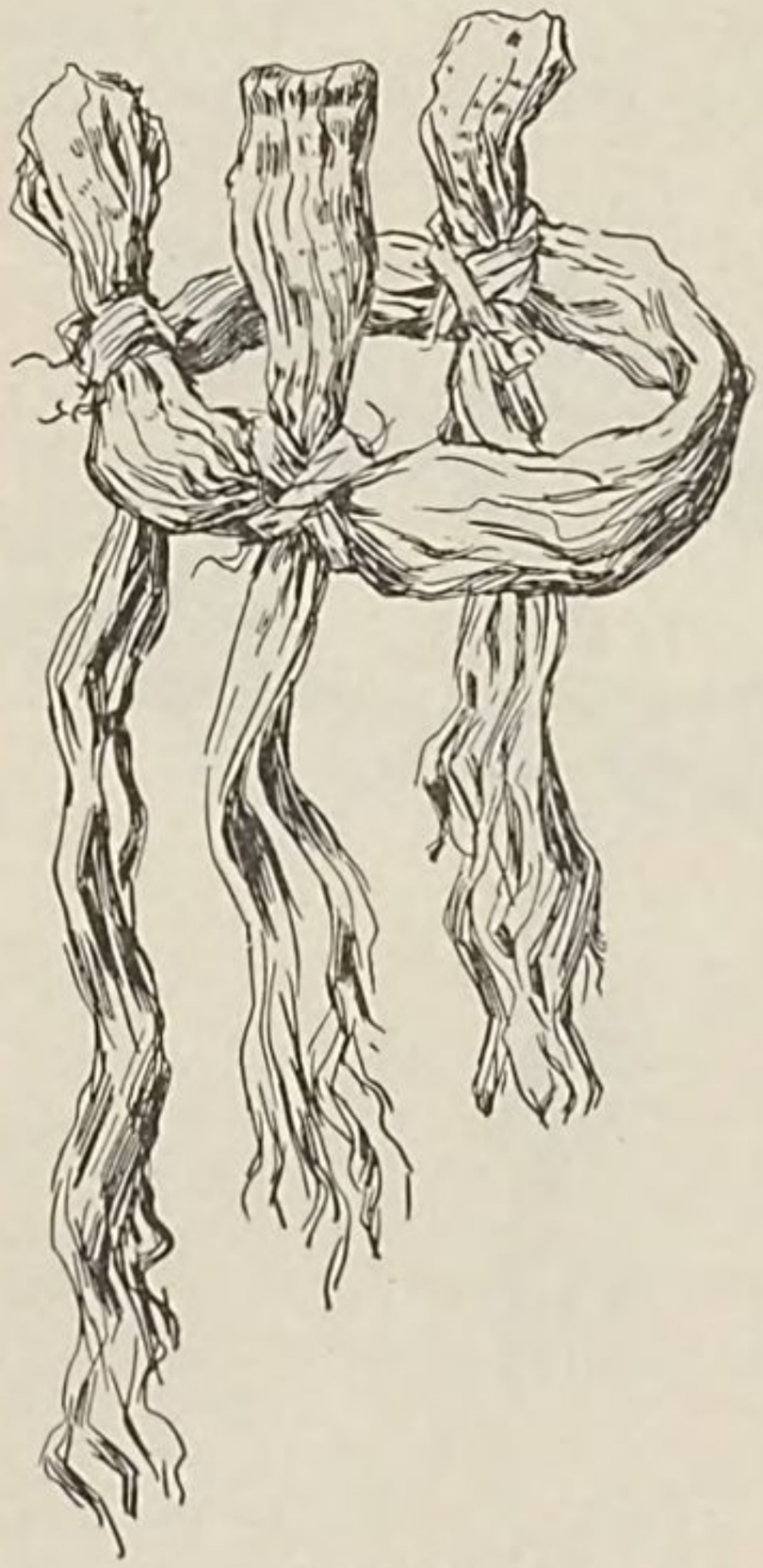

Fig. 179.

SECOND HEAD RING OF HAI′ALIK·AUAĒ.

Nimkish.

The crosspieces represent the powers of the shaman.

Cat. No. 175512, U. S. N. M. Collected by F. Boas.

The Koskimo are the first to enter. Each man carries as many hemlock wreaths as he has killed enemies during war expeditions. They also carry bows and arrows. Then they step up to the middle of the house and throw one wreath after the other into the fire, calling the name of the enemy whom it represents. As soon as a wreath is thrown into the fire they call "yē," and all repeat this cry. At the same time they shoot arrows into the fire. This ceremony is called yî′lxoa, which means placing the head of an enemy on a pole. The fire is called XusE′la, which means fighting place. The whole ceremony is called al'Xts'âliL wā′lastEm (carrying blood into the house and giving away much property) or k·'ā′-g·'ēuLaxstā′la (sharp edge of knife). At present the wreaths represent the number of coppers which a man has given away. They have taken the place of heads, because, according to the usages of the Kwakiutl, a man who has given away a copper by doing so becomes a victor over his rival. They also throw paddles into the fire, the meaning of which is that they send a canoe to call their rivals to a festival, in which they are going to show their greatness.

After the Koskimo have entered, the maa′mx'ēnôx come in. Pieces of board representing dorsal fins are attached to their backs. They carry wreaths of hemlock branches in their hands. Their arms are stretched back and they make the motions of swimming, blowing from time to time like whales. They drop their wreaths in the rear of the house, go out again, take their fins off, and reenter. Then the people beat time, and the maa′mx'ēnôx, holding their blankets stretched out backward, enter. They take up their wreaths, and call the name of the copper or other property that they are going to give away. Then they

[1] Qātsēstai′.

throw the wreaths into the fire. This means that they are going to rival the other tribes in the amount of property that they will give away.

The wives of the Koskimo, the qau'qōtsaxsEm (?), are the next to enter. Each of them carries a number of sticks, which represent the amount of property which they are going to give to their husbands. Each says what amount of property these sticks represent. They are followed by the qā'qaō and k·ē'k·ēxalāqa, the wives of the maa'mx'ēnôx. They also carry sticks and state how much property they are going to give away.

Last of all the mEsē'q, or Sea-egg, enters. Sharp sticks about 3 feet long are fastened to his clothing. Two men accompany him. When he comes to the rear of the house, all the sticks are pulled out from his clothing, and at the same time the names of all the coppers which were given away during the past year are called. Everyone who has given away blankets has one stick contributed to the ornaments of this peculiar dancer. The sticks are then thrown into the fire, while all sing out, "yē!"

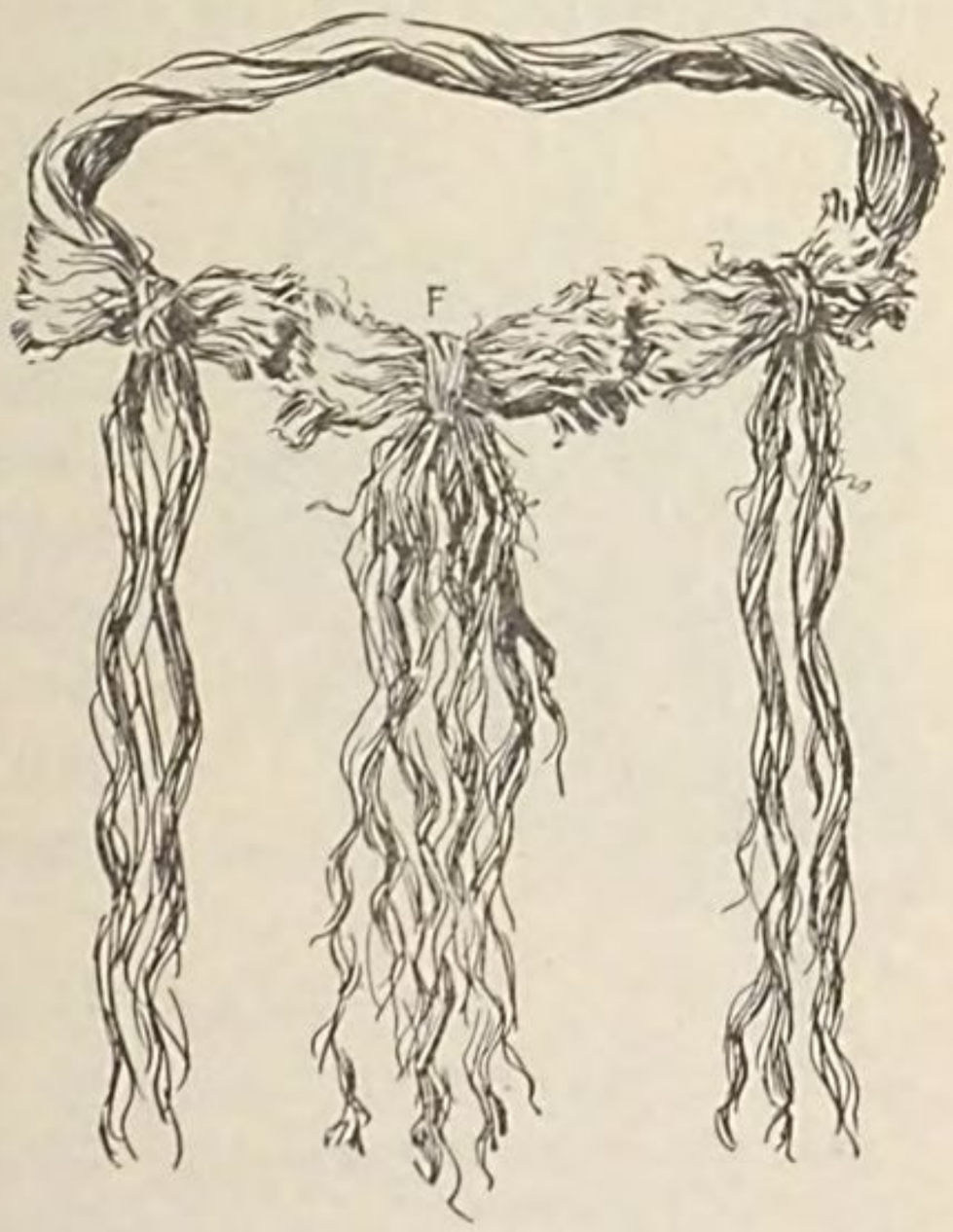

Fig. 180.

NECK RING OF HAI'ALIK AUAĒ.

Nimkish.

The three crosspieces represent the central and terminal heads of the sī'siuL.

Cat. No. 175514, U. S. N. M. Collected by F. Boas.

The maa'mx'ēnox and d'ō'd'opa then arrange themselves behind the fire, facing the rear of the house. The singing master stands behind them, facing the door and looking at the singers. The Koskimo and hē'mêlk sit on each side of the house, the women in the rear row. (See p. 436.)

Finally the seal society enter in the same manner as described above p. 506).

While they are going to their seats the singers slip out singly through the secret door. Then suddenly they all reenter the house with great noise, and the people say: "The great maa'mx'ēnôx have become excited."[1] They go around the fire slowly, holding their blankets spread out. Sometimes they are led by one of the mē'êmqoat. Then they pretend to pursue the latter.[2] If the member of the seal society should happen to be a fool dancer, they endeavor to hit his nose, and as soon as they succeed in doing so he gets excited and stabs the people. During all this time the singing master remains in his place.

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[1] Kuē'qōL la g·a maa'mx'ēnuxtsē'!
Wild these, the great maa'mx'ēnox.

[2] They act according to their names. The maa'mx'ēnôx are killer whales, while the mē'êmqoat are seals, who are the prey of the former.

After the singers have rearranged themselves in the rear of the fire, two of their number are sent to the door. Each has a rattle. They are the heralds who announce the dances which are to be performed that night in order to bring about the return of the novice. When the singers and the members of the seal society are in their places, the people slip out singly and return to perform their dances. On this evening they do not show the highest dances which they possess, but those which they owned when they were children. On the whole the lower grades of dances come in first, the higher ones later on, but there is no strict order. As soon as one of them approaches the house, the heralds shake their rattles, and upon this signal the singers begin to beat the boards rapidly, and continue to do so during the dance, at the end of which they sing one song of the dancer. The character of these dances was described in the preceding chapter.

Fig. 181.

HEAD RING OF HAI'ALIK·AUAĒ.

L'ā'sq'ēnôx.

Cat. No. 175522, U. S. N. M. Collected by F. Boas.

When about one-half of all the dances have been shown, and particularly after a dance that has been well performed, two messengers (hō'Laq'îs, listeners) are sent out by the speaker of the master of ceremonies to listen if no sign of the hā'mats'a's return can be heard. They go out, listen, and come back saying that they have not heard anything.

While the people are waiting for the dancers to come in, railleries are going on. The speaker of the yē'wix·ila sends the heralds: "Go to our friend (the bear dancer) and see if he has not washed."[1] The herald goes out, after turning in the door. When he comes back, and the next dancer is to be a woman, he may say: "She will not come; she is fighting with her husband;" or, "She will not come; she and her husband are kissing each other."

The dances continue until early in the morning, when the ghost dancer appears. As soon as the people sing his song, all the old hā'mats'as, who have not entered the house so far, get excited, their whistles are blown by the hē'lig·a, and they enter the house from all sides—through the roof, through the front door, and through the secret doors in the rear of the house. They jump down on the floor, squat, and, looking up, cry "hāp hāp!" They jump around the fire four times, looking up and crying "hāp!" all the time. Their cries are supposed to be heard by the novice in the woods, who is heard all of a sudden on the roof of the house. He runs around four times. Three times he pushes the boards of the roof aside, and then he jumps down. The

[1] Ha'g·a laxEns nEmō'kua (nā'nē). Ē'saē xō'sit.
Go to our friend (bear). Not he washed.

people surround him and try to hold him. He runs around the fire four times, but all of a sudden he has disappeared again, having made his exit through the secret door in the rear of the house. Only the hemlock branches with which he was adorned remain in the house. As soon as the people see that he has disappeared, they say that somebody has made a mistake which angered the hā'mats'a and caused him to leave the house again.

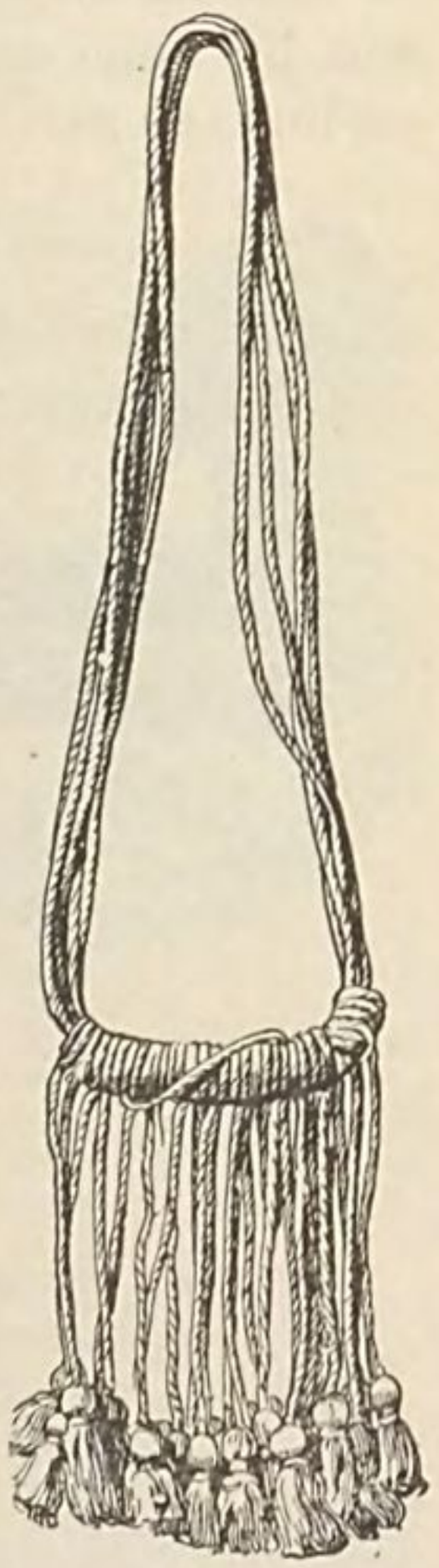


Fig. 182.

NECK RING OF SHAMAN, MADE OF RED CEDAR BARK.

IV A, No. 1033, Royal Ethnographical Museum, Berlin Collected by A. Jacobsen.

Not always is the hā'mats'a induced to return in the manner described here. Sometimes the xoā'ēxoē dances and the earthquake that is thus produced brings him back, or the dance of the t'ō'X'uît may bring him back.

In some instances a particular officer, the Lelē'L'-alēnôx, must try to call the novice. He is considered the chief of all the quē'qutsa. He wears a rough head ring and neck ring of red cedar bark which is twisted four times. His face is blackened. He enters carrying a baton and stops in front of the fire. If anyone should laugh, he points at him, and the person who is thus singled out must look downward. He goes around the fire singing his secret song, as follows:[1]

> Ah, ah, supernatural power! Ah, ah, ah, supernatural power! Hoo!

In the rear of the house he turns once, cries "hu!" and stoops down to listen. Then he continues his circuit and repeats this action in front of the house. While he is doing so the hā'mats'a appears on the roof, in the rear right hand corner of the house, runs around the roof, and opens a hole on the left hand front corner and looks down into the house. From here he rushes to the rear left corner of the house. Then he runs to the rear right corner, and to the front right corner, pushes the boards aside, and looks down into the house. Then the people take a number of blankets, spread them out tight, and hold them under the place where the hā'mats'a is looking down. Finally he jumps down into the blankets in the front right corner of the house. They try to hold him, and slowly go around the fire trying to lay their hands upon him, but he disappears again. Only his hemlock branches are left in the hands of the people.

Fig. 183.

HEAD RING OF WĀ'TANEM.

IV A, No. 6872, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

[1] Appendix, page 724.

Then the LEle'L'alēnôx says that the laughing of the person whom he pointed out in the beginning was the cause of the disappearance of the hā'mats'a. The laugher must call his daughter to dance, and he must take a staff (the feast pole qā'sōp'ēq) in his hands and promise to give a feast after her dance.

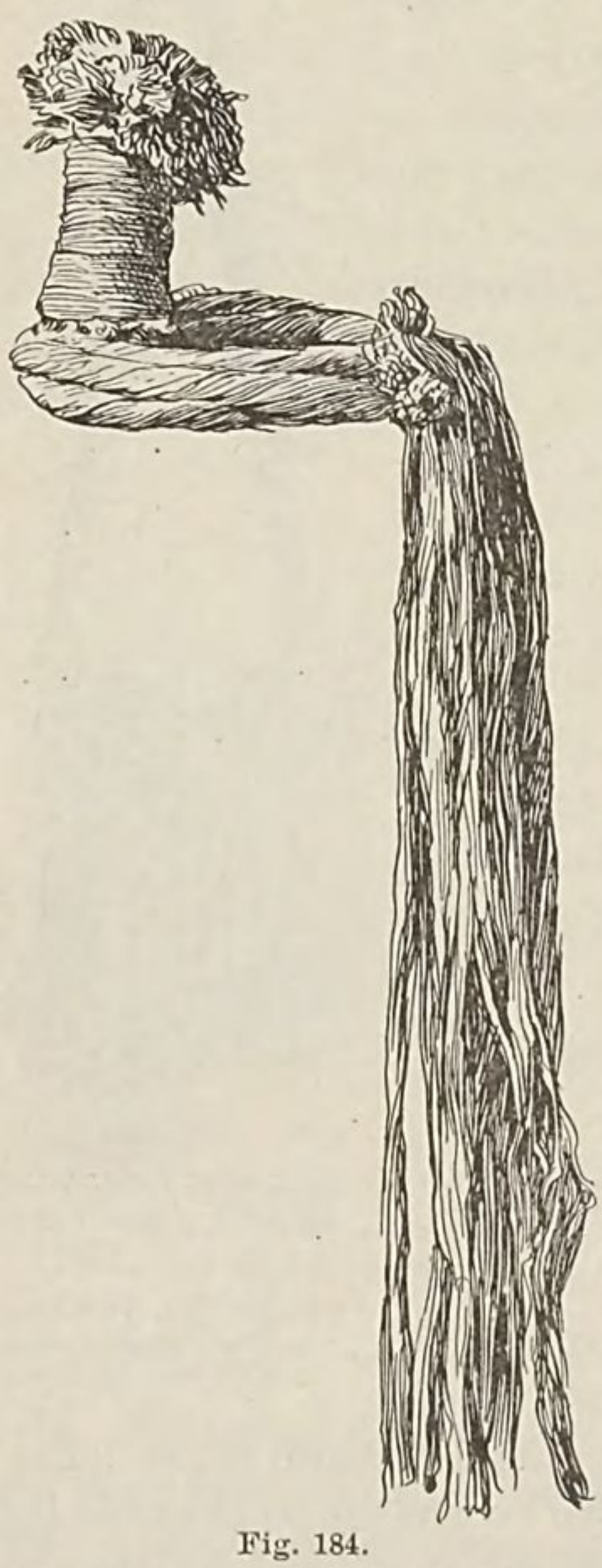


Fig. 184.

HEAD RING OF THE CHIEF OF THE KILLER WHALE SOCIETY.

IV A, No. 1824, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

If any other mistake should have been made, the LEle'L'alēnôx points it out in a similar way. When, for instance, a woman has brought her uninitiated children into the house, he will say on entering, "I smell someone who is profane;"[1] and the people will reply, "Important is your word."[2] Then he asks for red cedar bark, which is given to him. He makes a neck ring and a head ring (figs. 186, 187, pp. 527, 528). He asks one man to beat time. Then he sings his secret song, and suddenly the voices of birds (whistles) are heard on top of the house. He holds the red cedar bark in front of his face, pushing it forward with every step and crying, "ō, ō, ôp, ôp." Then he puts the cedar bark on the child's head. The birds' voices suddenly disappear, and are heard on the roof of the house of the child's father. Then that child must disappear, it being supposed that he has been taken away by these spirits.

After the novice has disappeared again, the chief's speaker asks all the people to make themselves ready to expect the novice on the following morning. All this time his whistles are heard in the woods. Then the people go to their houses and have a short rest, but after about an hour or two the yē'wix·ila calls them to his house and asks them to try to catch the new hā'mats'a. He says: "Take care! we want to save our great friend."[3] Then the master of ceremonies requests the seal society to assemble, and the quē'qutsa to follow them. He says, "Gather seals!"[4]

---

[1] Hmm; bāxusp'ala, smell of the profane.

[2] Awī'laxaōx wā'LdEmaq'ōs, Hō'LEletē.
Important your word, Hō'LEletē.

[3] Laams yā'L'ōXuētdExdaôxLōL nēnEmō'k qansō' wā'wultsEwax·'īt xEns
You, take care you, friends, we want to save our
nEmō'xtsē.
great friend.

[4] LōxsEmaLaa'mL is mē'emqoat.
In bunch you seals.

The k·î′nqalaʟala lead the way, each singing her secret song. All the people follow them toward the beach. The first k·î′nqalaʟala sings:[1]

Yiya ham yiyaha. I am the real tamer of BaxbakuālanuXsī′waē.
Yiya ham yiyaha. I pull the red cedar bark from BaxbakuālanuXsī′waē's back.

Then the second one sings:[1]

It is my power to pacify you, when you are in a state of ecstasy.[2]

They go westward, and as soon as they come to the place called Nau′alak'uas (place of supernatural power), about one-eighth of a mile west of the village, four sons or relatives of the yē′wix·ila are sent out to gather hemlock branches. During this time the singers sing the new songs which were made on the preceding day in the woods, in order to enable the other people to learn these songs. Now, the boys return, bringing the hemlock branches, which are used for making head and neck rings for the people. All the quē′qutsa form a row and take each others' hands. They sing the new songs and go forward. The old hā′mats'as and the other members of the seal society go before them. Then all of a sudden the new hā′mats'a appears, and is surrounded by the people, but he disappears again. It is not the novice himself who appears at this time, but some other man who looks like him, and who while being surrounded by the "seals" takes off his hemlock dress and dresses in red cedar bark like the other seals, so that apparently the hā′mats'a has disappeared again, leaving only his hemlock dress. Suddenly the novice is seen again in front of the village. Everybody runs to take him, but he disappears again in the same manner as before. After a short time he is seen again at Nau′alak'uas. He is surrounded, but disappears a third time. Then all the people form a row, take each others' hands, and each begins to sing his own secret song. Thus they approach the village, where the hā′mats'a is seen again. One man strips off his clothing and goes in front of the people. He is called the bait of the tribe (tē′lEm). As soon as the hā′mats'a sees him he rushes up to him, seizes his arm, and bites it. Then the

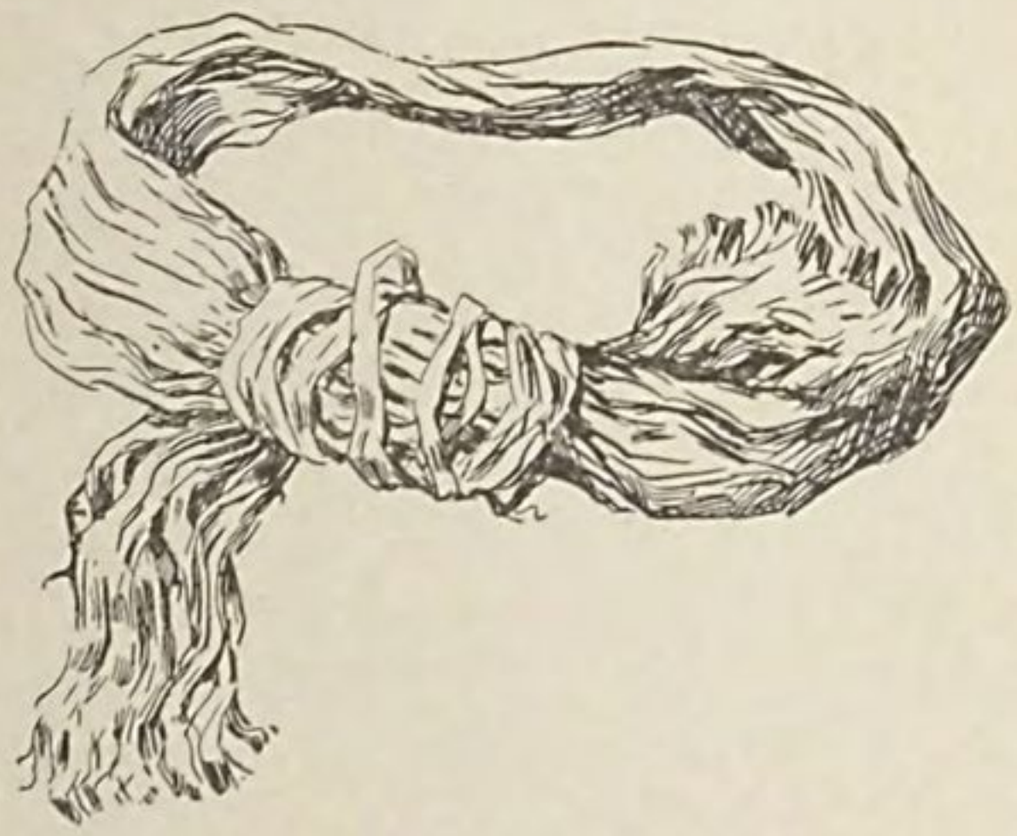


Fig. 185.
HEAD RING OF QUĒ′QUTSA.
Koskimo.
Cat. No. 175526, U. S. N. M. Collected by F. Boas.

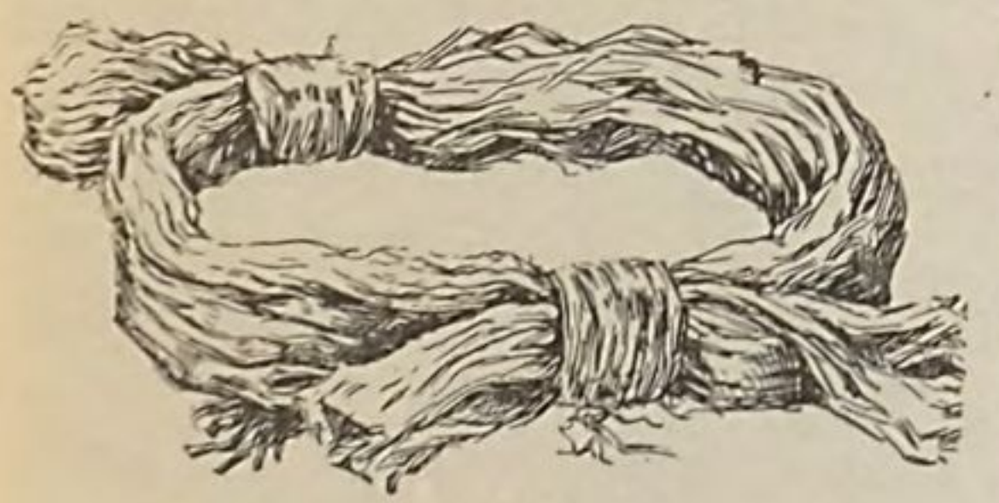


Fig. 186.
HEAD RING OF ONE WHO IS ADMITTED TO THE WINTER CEREMONIAL FOR THE FIRST TIME.
Cat. No. 175501, U. S. N. M. Collected by F. Boas.

[1] Appendix, page 724.

[2] This is the secret song of all the hē′lig·a.

people catch him and lead him toward the house, singing the new songs. (Plate 44.) The hē′lig·a sing their secret songs, and the uninitiated cry "hoî′p." By this means they attempt to tame the hā′mats'a. The people lead him to the house of the yē′wix·ila, who, on their approach, steps out of the house with his whole family, dressed in red cedar bark ornaments and button blankets. Their faces are marked with black spots. Their heads are covered with down. They dance in front of the house, accompanying the new songs. Some of the yē′wix·ila's relatives go down to the people, who lead the hā′mats'a, and hold boards in their hands for the people to beat time on. Then the latter begin to sing as follows: "Woe! you are making your parents poor, naualak!"[1] Then they walk into the house. After they have all entered, the new k·î′nqalaLala who returned with the hā′mats'a from the woods, and who, during the ceremony, is entirely naked, begins to sing her new song. She enters the house going backward, facing the hā′mats'a, whom she desires to lead into the house. The hā′mats'a, however, is apparently unwilling to enter, and stays for about half an hour in the door, where he turns four times, the hē′lig·a surrounding him all the time. During this time the people raise the ha′msp'ēq and the mā′wiL. As soon as it is completed, the hā′mats'a leaves the door, goes to the right until he comes to the rear of the house, and climbs the ha′msp'ēq. He ascends the roof of the house, runs around once, and returns, descending the ha′msp'ēq, or he jumps down from the door of the mā′wiL. As soon as he jumps down he rushes to one man and bites his arm. He goes around the fire once, holding him in this way. Then he climbs the ha′msp'ēq again, runs around the roof, and after he comes down again bites another man. This is repeated four times. The people during this time sing the new songs, and the hā′mats'a dances around the fire, but not properly, as he is supposed to be still out of his senses. After he has danced around the fire the fourth time, he goes into the mā′wiL. Then all the people take off the hemlock branches and throw them into the fire. This is called smoking the wildness of BaxbakuālanuXsī′waē out of the hā′mats'a. Then they arrange themselves according to the societies to which they belong. The yē′wix·ila who stands at the left-hand side of the door says: "I

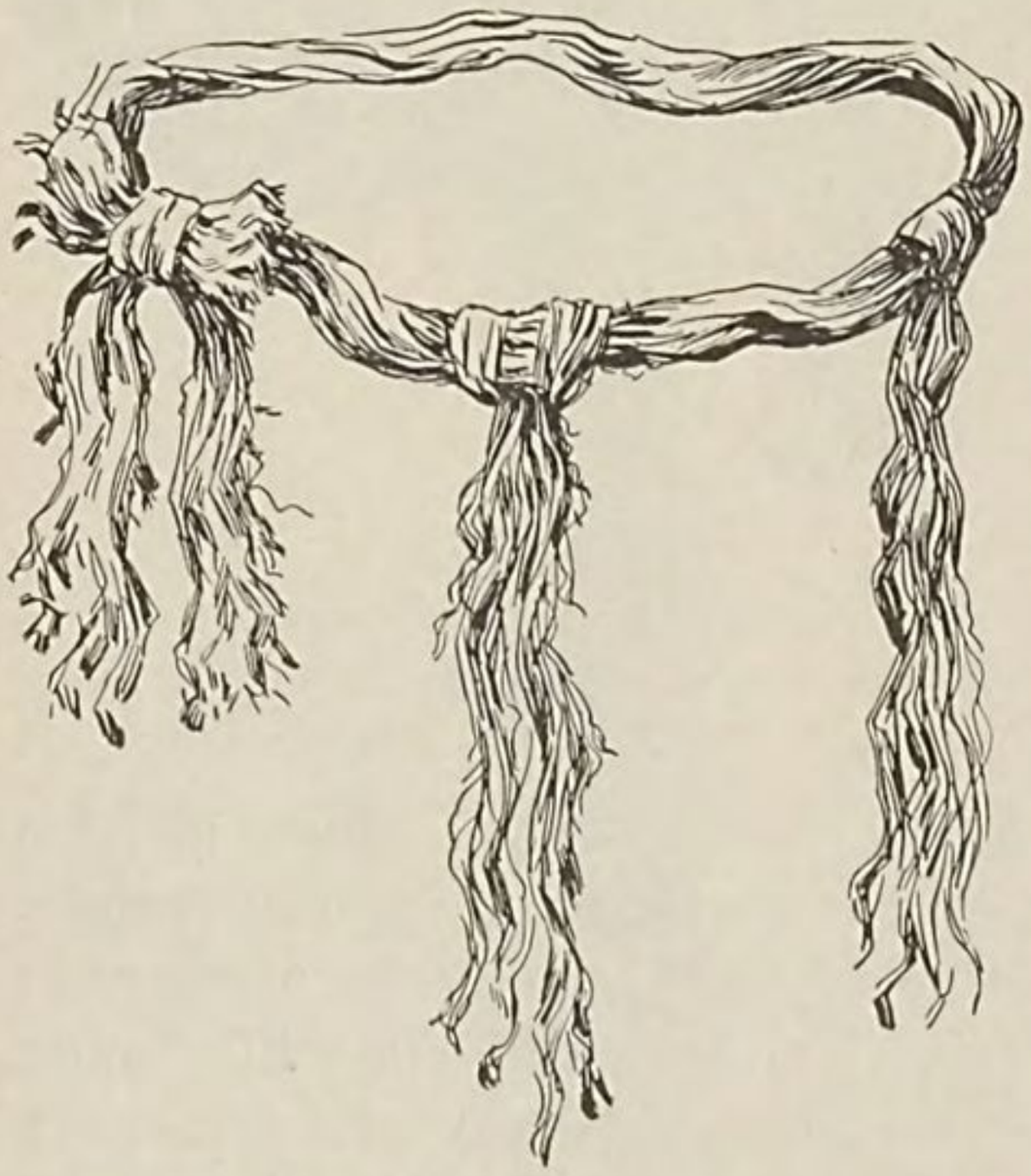
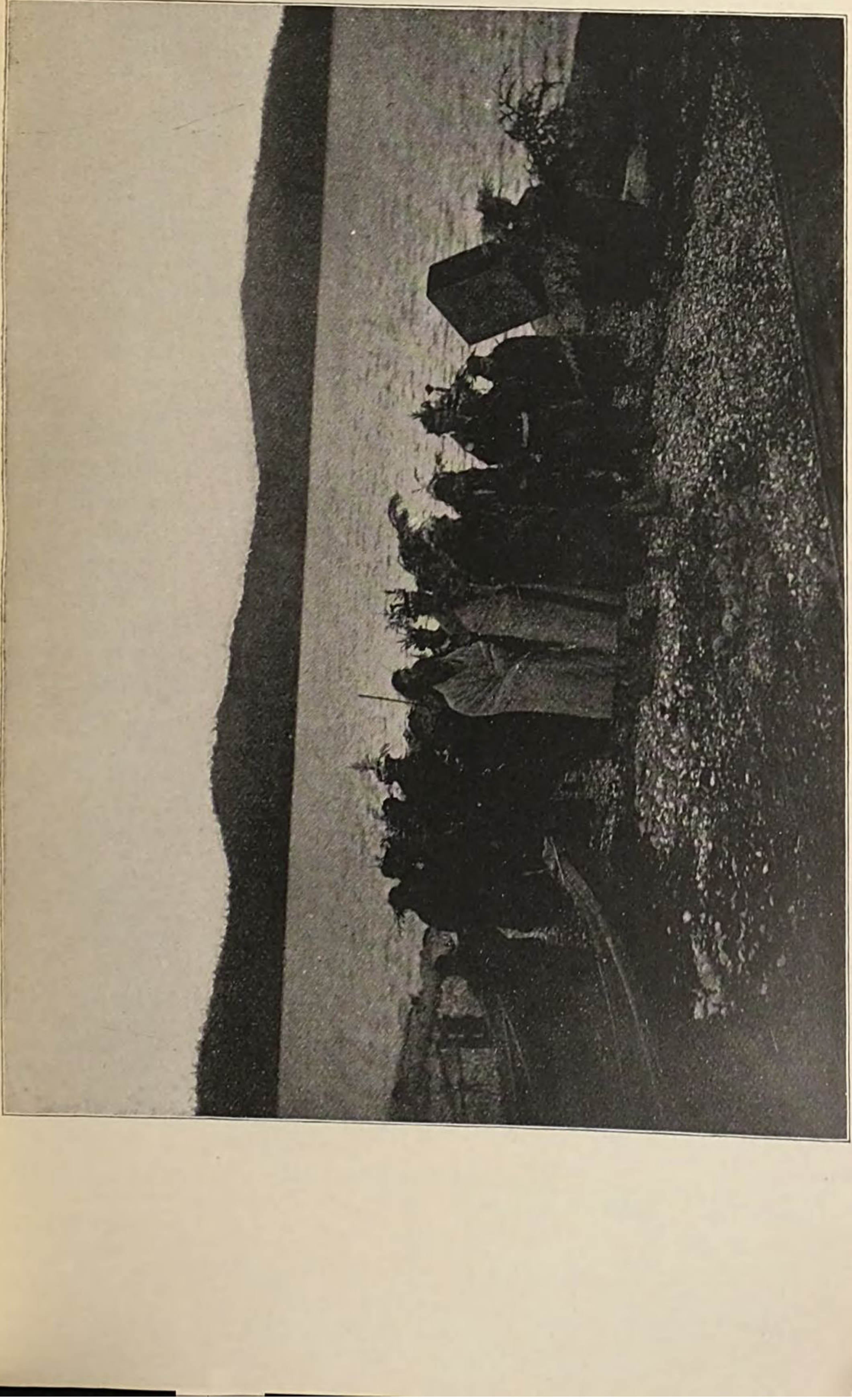


Fig. 187.

NECK RING OF ONE WHO IS ADMITTED TO THE WINTER CEREMONIAL FOR THE FIRST TIME.

Cat. No. 175502, U. S. N. M. Collected by F. Boas.

[1] Wō sis wun g·iL mōwēLōs nau′alakuē woē woē!
Woe you make poor men you naualak woē woē.



THE RETURN OF THE HĀ'MATS'A.

From a photograph.

am (Hē′ɪLtsaqolîs)! Come friends and give away the bracelets and coppers."[1] The name by which he calls himself here is the one which he assumes at this festival. Then the members of the society to which he belongs take the brass bracelets and the coppers out of the box and give them to him. He says: "I obtained this property from my father-in-law, and I am going to distribute it now according to the laws of the winter dance."[2]

The yē′wix·ila turns everything over to the master of ceremonies or to one of his own relatives, who in their turn distribute the property among the assembly, giving the women first, then the "seals," and lastly the quē′qutsa, each person receiving one stick of bracelets and one stick of coppers. After the property has been distributed, the people go home and take their breakfast in their own houses.

In the evening the yē′wix·ila again requests four messengers to invite the people. He tells them the names of the new hā′mats'a and k·î′nqalaɪala, and tells them to call the people to come to his house, in order to tame the new hā′mats'a and k·î′nqalaɪala. Each of these messengers receives one button blanket. They go to the various houses and say:[3]

"Shamans! We will pacify this supernatural one. We will soften (TsE′mqok·aɪa)[4] by means of our songs. Friends! We will pacify this supernatural one. We will restore to her senses (Hē′lig·îxstēg·ilisa).[5] Let us go into the dancing house before dark!"

After they return to the dancing house, the yē′wix·ila calls four more messengers, who also receive a button blanket each in payment for their services. They must go to the end of the village, and beginning at the last house they must say: "We come back to call you. The fire is going out. We have no fuel. Come quick, shamans!"[6] The people follow them at once, and all enter the dancing house.

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[1]Nō′guam Hē′ɪLtsaqolîs. Qē′laxdaôx lag·a nēnEmō′kᵘ qas ax'ē′itdax'ōs sā′xa
I am " come, friends, for you to give the
k·'ō′kulē LEwa Lā′qôxsEm qas iā′x'uitaōsas.
bracelets and coppers that you give them away.

[2]La'mEnuX iā′x'uiL nēnEmōkuē′ g·ānō′x g·āyanEmX lā′xEnō′X
We will give away, friends this what we got from our wife there we
qig·ā′taas.
from whom wife was obtained.

[3]La'mEns yōLaLai′ pēpaxalai′ laxoa Lōkoalaxai′. La'mEns tamalqoaLai′
We will tame paxalas this supernatural one. We will make soft inside by means of songs,
lāx TsE′mqok·aLai′. La'mEns hēlēk·aLai′ nēnEmōkoai′ lā′xoa Lōkoalaxai′.
on "sound of swallowing." We will tame friends at this supernatural one.
La'mEns nā′nâqa'maLai′ pēpaxalai′ lāx Hē′lig·îxstēg·ilisai′. NānEmts'âEmLEnsai′.
We will restore to his senses paxalas on Tamer of (Hā′mats'a's) mouth. We will all go in before dark.

[4]Name of the hā′mats'a novice.

[5]Name of the k·î′nqalaɪala novice.

[6]Qātsēsdaai′ la'am k·'îlx'ētdē da lEqoī′L; k·'ē′osnūX lEquiLaai′; wä hā′'lag·ilēL
We walk back going out the fire; not we firewood; wä hurry
Lax pēpaxalai′.
paxalas.

During the whole day the whistles of the hā′mats'a were heard in the house. Then the speaker of the yē′wix·ila says as follows: "Friends, do as I desire! Try to pacify our friend! Let all the women dance!"[1] This is a request to the women to dance with the hā′mats'a in order to tame him. The master of ceremonies calls upon all the ha′mshamtsEs, the hai′alik·ilaL, the t'ō′X'uît, and the k·î′nqalaLala to dance with the hā′mats'a. They blacken their faces, put eagle down on their heads, and begin to dance. Then the hā′mats'a shakes the ha′msp'ēq and comes out of the mā′wiL. At once the people begin to beat the boards, but do not sing. The hā′mats'a goes around the fire once and disappears again in the mā′wiL. The master of ceremonies says: "Somebody must have made a mistake," and calls up the paxa′lalaL—that means the shaman dancer. He steps forward, calls for a round rattle, and as soon as the master of ceremonies has given it to him he begins to sing the song of the paxa′lalaL.[2] "You took me around the world, BaxbakuālanuXsī′waē." He goes around the fire and then enters the mā′wiL at the same place where the hā′mats'a went in. He stays there for about ten minutes and then reappears, saying that the people have made too much noise, and that they did not have enough down on their heads, and that the hā′mats'a had disappeared again for these reasons. The master of ceremonies calls for four dishes of eagle down. Then four men come out of the right hand front corner of the house carrying the dishes and saying that they were waiting for the orders of the master of ceremonies. He sends the four men to feather the heads of the people, beginning with the hā′mats'a, continuing with the other "seals," and finishing with the quē′qutsa. Then the master of ceremonies says that the eagle down brought into the house supernatural power (which is not supposed to be present where there is no down).

Now the hā′mats'a is seen to leave the mā′wiL again. He jumps down, goes around the fire once, and disappears again. Again the paxa′lalaL is sent to discover if a mistake has been made which induced the hā′mats'a to leave again. He sings the same song as before, enters the mā′wiL, where he stays for some time. He reappears and says that the hā′mats'a was displeased because the hē′iig·a did not sing their secret song. Then four hē′lig·a are sent into the mā′wiL. The yē′wix·ila gives four button blankets to the master of ceremonies and requests him to do with them whatever he pleases. The master of ceremonies gives them to the hē′lig·a, who then begin to sing: "Wa

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[1]Ia aadē′ la'ams waxē′idEXdaôxL g·ā′xEn qās gu′nx·'itdaōs]ā′lōLa xEns
Ia, friends, you give my desire me for you try get him our
nEmō′Xdaōxuē′x. Nā′xulēLdaôxEmLEs ts'ē′daqä′ yixoā′xdaôxLEx.
friend our. All you women dance.

[2]Yam ha māin ha mai yē, hamamaai hama.
LaXdEnō′kᵘ laistai′sElahayūas, BaxbakuālanuXsī′waē.
You took me around the world, BaxbakuālanuXsī′waē.
They all have one song in common.

ha wa ha wa ha wa ha wa ha hai ya yē hē ya yē ya ya wa ha wa ha hai ya yē hē ya yē ha yē ha, hoîp."

Now they enter the māwiL, and after a short time bring out the hā'mats'a, who bites the arm of one of them. As soon as they approach the door of the house, the hā'mats'a lets go his hold, turns around, and bites a second one in the same way. They continue their way, and, when they reach the mā'wiL, the hā'mats'a disappears once more. The hē'lig·a follow him, and soon he reappears, biting the third one. As soon as they come to the door, he lets go his hold and bites the fourth one. When they reach the rear of the house again, the hē'lig·a do not allow him to reenter the mā'wiL. The people beat time rapidly. During these ceremonies the hā'mats'a is entirely naked, with the exception of a wreath of hemlock branches which he wears around his neck, one around his head, one around the waist, and bracelets and anklets of the same material.

Now the people begin to sing the new songs which were made for the hā'mats'a. After the first song has been sung, he disappears in the mā'wiL, and immediately the mask of QoāqoaXuālanuXsī'waē, the raven, appears. After the mask has disappeared, the hā'mats'a appears again, entirely naked. When he has finished his dance, the mask of BaxbakuālanuXsī'waē comes out (see p. 446). The mask disappears in the mā'wiL, and the hā'mats'a comes out again dancing slowly. He wears a crown of red cedar bark on his head, a wide neck ring of the same material, anklets, bracelets, a dancing apron, and a bear skin. Then the people continue to sing the new songs which were made for him. The master of ceremonies spreads a new mat in the middle of the rear of the house in front of the singers. After his dance the hā'mats'a sits down on this mat, facing the rear of the house. Then the k·î'nqala-Lala comes out of the mā'wiL singing her new secret song. After she has finished, the people sing the new songs which were made for her in the woods. She dances until the two songs are finished. Then the master of ceremonies calls up a man named Ts'ē'qamē (quē'qutsa name); "Come, friend, try if you can reach our friend."[1] This is the request to him to tame the hā'mats'a. Ts'ē'qamē asks for four pieces of white soft cedar bark, which are given to him by the yē'wix·ila.[2] Ts'ē'qamē takes them, crying "hoîp, hoîp." That means that he is putting the secret of the winter dance into the bark. He asks for a pole (about 6 feet long), which is given to him by the yē'wix-ila, or by the brother of the latter, who is looking after the fire. Ts'ē'qamē ties the four pieces of cedar bark to the end of the pole. Each piece is about 8 feet long. He tells the people to be ready to beat time when the signal is given. He asks one of the k·î'nqalaLala to take off the clothing of the hā'mats'a.

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[1] Qelag·a adē', qās gu'nx·'itaōs dō'qoaL qās goayō'Lasōs āx g·îns nEmō'Xtsēk·.
Come, friend, for to try see that you reach our friend.

[2] He says: Ax'e'ta g·ax k·ā'tsekoaqaE'n; mōxsaE'mLē.
Give white cedar bark me four pieces only.

The k·î′nqalaLala goes around the fire saying "hoîp, hoîp, hoîp, hoîp," and then takes the hā′mats'a's clothing and cedar bark ornaments off. Then Ts'ē′qamē gives the signal to the people to begin beating time, and as soon as they begin he puts one end of the cedar bark into the fire. He runs around the fire until he comes to the place where the hā′mats'a is sitting. Here he swings the burning bark over the hā′matsa's head, and at the same time the latter turns around squatting and crying "hāp, hāp, hāp." Ts'ē′qamē goes around the fire once more, and keeping his eye on the hā′mats'a until he reaches him the second time he swings again the burning cedar bark over his head. This is done four times. This is called nawa′qamā. Then the hē′lig·a lift the hā′mats'a, lug him around the fire, and take him into the mā′wiL. The master of ceremonies now calls the yē′wix·ila and asks him to pay Ts'ē′qamē for his work. The ye′wix·ila goes into his bedroom and brings out a button blanket, which he gives to him. Then the yē′wix·ila asks the master of ceremonies or one of his relatives to distribute the rest of the brass bracelets, coppers, and button blankets among the people. Each person receives one stick of bracelets, one stick of coppers, and one button blanket.

Now all the profane must leave the house. The door is closed and the purification of the hā′mats'a begins. Four men must take part in this ceremony,—the kuē′ts'ēnôx or the washer, the qa'nēnôx or the rubber, the ts'ē′silaēnôx or the tongsmaker, and the t'a′mtsē-nôx or the time beater. Whatever these men ask for incidentally to the ceremony must be given to them, and they retain it as their personal property. When everything is quiet, the ts'ē′silaēnôx asks for a piece of cedar board about 6 feet long, for a wedge, and for a stone hammer. After this is brought to him, the t'a′mtsēnôx sits down in his place ready to beat time. Then the ts'ē′silaēnôx asks for a belt. After he has received it, he puts it on, goes around the fire four times, carrying a rattle in his hand, while the t'a′mts'ēnôx is beating time. He does not sing, but says "hoîp, hoîp." After he has gone around the fire four times, he stops, puts his rattle down, and stoops three times, as though he was going to take up the hammer and wedge, but he does not really take it until he stoops down the fourth time. Every time he stoops the t'a′mtsēnôx gives a short rap on the board. Then the ts'ē′silaēnôx goes around the fire until he comes to the place where the board is lying on the ground. He steps up to it, turns once to the left, puts his wedge against the board, and pretends to drive it in with his stone hammer, but he takes it off again, turns once more to the left, and places it a second and third time against the board. The fourth time he really, with one hard blow, drives the wedge into the board and splits it. Then he asks the yē′wix·ila for a knife, and after it is given to him he makes a pair of tongs out of the cedar board. Then he asks for a clean mat and for a piece of soft white cedar bark. He takes it up with his tongs, goes around the fire, and gives it to the

qa'nēnôx. Every time these men go around the fire the t'a'mtsēnôx must beat the boards.

Then the qa'nēnox takes the mat and spreads it on the floor at the left-hand side of the door, and lays the cedar bark on it. He begins to rub the bark and to cut it. When cutting, he draws his knife three times, pretending to cut, and every time he does so he turns to the left. The fourth time he really begins to cut the bark. One of the pieces which he cuts is about 6 feet, and two other pieces about 2 feet long each. A knot is tied in the middle of the long piece, which is then tied in shape of a ring, the ends crossing each other and leaving about 1 foot free. The two shorter pieces are tied near the middle of the long piece, so that the whole forms a ring with two ends on one side and two ends near the middle. The ring represents the body, the knot the head, the upper ends the arms, and the lower ends the feet of a person.

Now he rises and gives a signal to the t'a'mtsēnôx to beat time. He goes around the fire once and stops near the tongs which the ts'ē'silaēnôx made. Then he puts the ring down. Now the ts'ē'silaēnôx rises. He spreads the tongs with a small stick. Three times he pretends to take them up, turning each time. The fourth time he really takes them and goes toward the ring of white cedar bark, the qa'nā'yu. At this time the t'a'mtsēnôx begins to beat time again. The ts'ē'silaenôx goes around the fire with the tongs in his hands and keeps his eye on the qa'nā'yu all the time. When he comes to the mat on which it is lying, he pretends to take it up with the tongs, but he does not touch it. Then he turns around to the left and extends his arms toward the place of the rising sun. Every time he does so the t'a'mtsēnôx gives a hard rap on the board, and the people cry "wa!" This is repeated three times; the fourth time he takes the qa'nā'yu, and goes around the fire four times until he arrives at the east side of the house.

Then he pushes up the tongs three times. The fourth time he turns them around and places the handle under the roof of the east side of the house. He goes around the fire four times. Then he pretends to take up four stones with his tongs. He does not really take them until the fourth time. During this time the t'a'mtsēnôx beats again. Then the kuēts'ēnôx asks for a new dish, which is put on the floor. He asks for water, which is brought to him in a bucket. When he takes the latter, he gives a signal to the t'a'mtsēnôx to beat. He walks around the fire with the water, while all the people say "wa wa wa." Every time he comes to the point where he started, either opposite the door or in the rear of the house, he turns and lifts his bucket toward the sun. Every time he does so the t'a'mtsēnôx stops with a loud rap. After he has done so four times, he goes to the dish, which is standing at the left-hand side from the door. Three times he pretends to pour out water, and the fourth time he empties it into the dish. After this has been done, the new hā'mats'a is called to come out from the mā'wiL. He and the k·î'nqalaLala come out entirely naked. A new mat is put

down for them next to the dish. The qa'nēnôx holds the mat in his hands, turns, and pretends to put it down. After he has done so three times, he really puts it down. Every time he turns he says, "hoî'p." The fourth time, after putting down the mat, the k·î'nqalaLala sings the hē'lig·a song.[1] The k·î'nqalaLala goes four times around the fire singing. The hā'mats'a must follow her, and every time the k·î'nqalaLala turns he must turn too. They turn whenever they reach the point opposite the door and in the rear of the house. After they have made four circuits, they sit down, the hā'mats'a looking wild all the time, as though he wanted to bite the people. The qa'nēnôx rises and goes around the fire after signaling the t'a'mtsēnôx to beat time. He takes a small stick, and places it in the wall of the house a little below the tongs on which the qa'nāyu is hanging, but before really placing it there he pretends to make the motion three times, turning after each motion. Then he attempts to take the qa'nāyu from the tongs, but he really does not take it down until after he has made the motion three times. As soon as he really takes it, the t'a'mtsēnôx gives a loud rap, and says "ya." Then the qa'nēnôx turns once and puts the qa'nāyu on the short stick. Again he goes around the fire while the t'a'mtsēnox is beating time. He goes to the tongs, turns around once, and takes them down.

He goes around the fire holding the tongs downward. During this time the t'a'mtsēnôx beats time. The qa'nēnôx stops at the door and holds the tongs toward the door. Then the kuē'ts'ēnôx rises, and with a common baton he strikes the small stick which spreads the tongs, thus throwing it out of the door. If the stick should happen to strike the walls of the house and not hit the door, it forebodes short life for the hā'mats'a. Then the ts'ē'silaēnôx turns and goes around the fire. Three times he pretends to take the stones out of the fire, every time extending the tongs towards the sun. The fourth time he really takes the stones up. Then the people cry "wa wa." He turns, goes around the fire four times, and stops near the dish containing the water. Three times he pretends to throw the stones into the water, and every time he does so the t'a'mtsēnôx beats time. The fourth time he throws them into the water.

This ceremony is performed with each stone singly. Then he goes again around the fire and puts the tongs back under the roof in the same place where they were before.

Now the kuē'ts'ēnôx rises. He goes around the fire stretching his right hand backward and shaking it. This is the signal for the t'a'mtsēnôx to beat the board as hard as possible. Every time he reaches the east and the west side of the fire he turns around and the beater gives one short rap. Every time he comes to the turning point he extends his hands toward the qa'nā'yu as though he was going to take it down. His hands are shaking all the time like those of Bax-

[1] It is my power to pacify you (see page 527).

bakuālanuXsī′waē. The fourth time he really takes the qa'nā′yu down. Its "head" is in his left hand, its lower end in his right hand. He holds his left hand stretched forward. He goes around the fire, and at the turning point extends the ring toward the sun. Every time he does so the t'a′mtsēnôx gives a short beat.

He walks around the fire four times, and finally stops near the hā′mats'a. Then the qa'nēnôx calls the kuēts'ēnôx to come to the hā′mats'a. The kuēts'ēnôx goes aroung the fire four times, stops at the dish holding the water, and stoops down three times, intending to dip water out with his hands. He does not really take it until the fourth time. He holds the water in his two hands, goes around the fire, lifts it toward the sun, turns around, and puts it on the head of the hā′mats'a, softly stroking the latter. Then he takes more water, puts it again on the hā′mats'a's head in the same manner. This ceremony is also repeated four times. The k·î′nqalaLala sits next to the hā′mats'a. The kuē′ts'ēnôx turns around and puts four handfuls of water on her head in the same way as he put it on that of the hā′mats'a. Then the qa'nēnôx rises again and the t'a′mtsēnôx beats time. He goes around the fire carrying the ring, and on the west side he extends it toward the sun. Then he walks around to the hā′mats'a, turns slowly, and puts the ring over the hā′mats'a's head, doubling it up and wiping his whole body. The hā′mats'a first extends his right arm, then his left arm, through the ring. When the ring comes down to his feet, he raises his right leg first, puts it down outside the ring, turns all around on his right foot, then takes up his left foot, and sits down on the mat, facing east. The qa'nēnôx takes the ring up, turns around, and drops his left hand and raises his right hand alternately.

Again the hā′mats'a extends his right arm, and he rubs him in the same way as the first time. This is repeated four times. Then the qa'nēnôx goes around the fire and performs the same ceremony with the k·î′nqalaLala. Then the people sing: "In olden times you went all around the world with the supernatural being."[1]

The qa'nēnôx takes the tongs down from the roof and takes up the qa'nā′yu, while the t'a′mtsēnôx is beating time. He goes around the fire swinging the ring, turns in the front and in the rear of the house, raising the ring toward the sun. After he has gone around the fire four times, he swings the ring over the fire until it ignites. Then all the people say "wa wa." He walks out of the house, and burns the ring on the street. Then he burns the tongs in the house. Then all the people are allowed to enter the house.

After the song has been sung, the hā′mats'a gets excited, leaves the house, and runs around the village.

The yē′wix·ila now brings all his dishes and kettles, spoons and mats, and distributes them among the people of his tribe, the people going to the pile and each taking one piece. This celebration lasts until it is nearly daylight.

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[1] Appendix, page 724.

About this time the four officers, the kuē′ts'ēnôx, the qa'nēnôx, the ts'ē′silaēnôx, and the t'a′mtsēnôx, leave the house, the 'ast named carrying the baton. Then they say:[1] "Here is food for you quē′qutsa."

This is the notice for the last great feast in the winter dance ceremonies. At this time they count up all the mistakes made by the hā′mats'a.[2]

For four days after this the hā′mats'a runs about biting the people. On the fourth night the yē′wix·ila calls his society and tells them that the ha′msp'ēq is to be burnt. A messenger belonging to his society is sent out to call all the people together. He is given a button blanket and a new head ring and neck ring. This messenger goes to every house and says:[3] "Friends, we will tame our great friend ————." Then the whole tribe, men, women, and children, assemble. They sing the hā′mats'a songs, and during the ensuing day the yē′wix·ila pays them for their bites, the price being one canoe for each bite. The women who danced receive bracelets; the men who sang, button blankets. These presents must be returned with interest when the receivers give a festival another year.

All the quē′qutsa must now leave the building. The fool dancers and bears are also required to go out. Only the hā′mats'a, ha′mshamtsEs, nō′ntsistalaL, qoē′qoasElaL, nā′ne of BaxbakuālanuXsī′waē, and k·î′nqalaLala; the lāxsâ, stay. They nail the door up and close all the chinks and holes in the walls. The k·î′nqalaLala take the batons, then all the hā′mats'as begin to cry "hāp, hāp." The ha′mshamtsEs cry "wip, wip, wip," and all the others utter their peculiar sounds. The k·î′nqalaLala beat time, and each sings his own song. During this time the hā′mats'a gets excited, goes around the fire and around the ha′msp'ēq four times. Then they lift the ha′msp'ēq and pull it down, laying it so that it slants down from the roof. During this ceremony all the hā′mats'as are naked. Four times they go up and down the ha′msp'ēq while it is in this position, crying "hāp, hāp." Then the ha′msp'ēq is taken down entirely. The hā′mats'as cut it into four pieces, while the k·î′nqalaLala and the others who are present make as much noise as possible. Then four hā′mats'as carry each piece. They carry it around the fire, turning in front and in the rear of the house, and crying "hāp" all the time. Then they throw the pieces into the fire. Next, the mā′wiL is pulled down and burnt with similar ceremonies. For four days they remain in the house singing the new hā′mats'a songs. On the fourth day they dress in red cedar bark, strew their heads with feathers, and blacken their faces. Then the wä′lēqa—the first meal of the hā′mats'a

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[1] Hamāyaai′ qa s quēqutsai′.
Food for you quē′qutsa.

[2] Qā qEmxsâlē qā kuXwuLtsEwē qā dā′daLtsâlē
For turning to left in qanā′yu, for falling out of qanā′yu, for laughing through qanā′yu.

[3] Lamans iâ′LaLai′, nēnEmōkoai′, lāxans nEmōxtsē′ (Xauqumq'EsElag·ilîsk·as'ō
We will tame friends our great friend (Real skull eater).
BaxbakuālanuXsī′waē).

after his return from the bush—is celebrated. The k·î′nqalaʟala leaves the house, followed by the hā′mats'a, each singing his own song. They go into four houses and are fed by the people. The hā′mats'a must eat all that is given to him. Then they walk into the next house, where they are fed again.

Now the whole tribe assembles again in the house of the yē′wix·ila. A canoe mast is put up in the middle of the house, and the master of ceremonies asks, "Who will take the red cedar bark off from the people and keep it until next winter?" Whoever intends to give a winter dance the following winter must step up and take hold of the stick. Then all the people take their rings off and throw them into the fire. Four only are kept until the next year. The people tie handkerchiefs around their heads in place of the cedar bark.

Then "the sound of the batons is driven out of the house." The people beat time four times and then throw all the sticks into the fire. This is the end of the winter dance.

After biting persons, and particularly after eating slaves or bodies, the hā′mats'a must observe a great many rules. Immediately after they have eaten of a corpse, the hē′lig·a brings them salt water, of which they drink great quantities in order to produce vomiting. If they do not vomit as many pieces as they have swallowed, their excrements are examined in order to ascertain if all the pieces of human flesh have passed the body. The bones of the body that they have eaten are kept for four months. They are kept alternately four days in their bedrooms on the north side of the house where the sun does not strike them, and four days under rocks in the sea. Finally they are thrown into the sea.

The hā′mats'as are not allowed to go out of the house door, but they must use the secret door in the rear of the house only. When one of them goes out to defecate, all the others must go with him, each carrying a small stick. They must all sit down together on a long log. They must rise again three times, and do not sit down until the fourth time. Before sitting down they must turn four times. Before they rise they must turn four times. Then they go back to the house. Before entering they must raise their feet four times. With the fourth step they really pass the door. They go in, the right foot first. In the doorway they turn four times and walk slowly into the house. They are not allowed to look back.

For four months after eating human flesh the hā′mats'a uses a spoon, dish, and kettle of his own, which are thrown away after the lapse of the prescribed time.

He must wear soiled cedar bark. He must stay alone in his bedroom. A grizzly bear dancer is placed in the doorway to see that no one enters.

Before taking water out of a bucket or before dipping it out of a brook he must dip his cup three times into the water. He must not take more than four mouthfuls at one time.

He must carry a wing bone of an eagle and drink through it, as his lips must not touch the brim of his cup. He also wears a copper nail to scratch his head with, as his nails must not touch his skin, else they would come off. For sixteen days after he has eaten human flesh he must not eat any warm food, and for four months he is not allowed to blow hot food in order to cool it. For a whole year he must not touch his wife, nor is he allowed to gamble or to work. When the dancing season is over, he feigns to have forgotten the ordinary ways of man, and has to learn everything anew. He acts as though he were very hungry all the time.

The whole ceremonial of bringing back the novice is, according to the ideas of the Kwakiutl, a repetition of the same ceremonial performed by the wolves who attempted to bring back their novices; and the following tradition, which, however, is not complete in all its details, is made to account for its origin:[1]

Mink made a salmon trap back of Qā′logwîs, the village of the Kwakiutl. The different tribes held a winter ceremonial, and the sons of the chief of the wolves had disappeared in the woods. While there they spoiled Mink's salmon trap. For three days they did so. Then Mink became angry. He made up his mind to watch who was tampering with his salmon trap. He went there in the evening and hid near his salmon weir. Now the four sons of the wolf, who had disappeared in the woods, came. They went right up to the salmon weir and took out the salmon that had gone into it. Then Mink said to himself, "You are the ones who tampered with my weir." They sat down and ate the salmon raw. Mink crawled up to them from behind and killed them with his club. He cut off their heads, and went home carrying the four heads. Nobody knew that he had killed them; even his mother did not know it.

Now the wolves were going to bring back their novices after two days. When the time came for bringing the novices back, Kuē′kuaxāoe was master of ceremonies. Mink closed all the holes and chinks of his own house, and tied ropes of cedar around it to strengthen it.

Before daylight Mink went in his canoe to Mē′mk·umlîs. He made a salmon weir of stones. Then he went and sat down on a rock. He looked at his weir. "What fish is in my trap?" he said. "A small bull head," replied the trap. Then he scratched his head. "Oh, that is pretty; I am working hard looking after my trap! Throw it into the water!" He asked again, "What fish is in my trap?" It replied, "A small flounder." He threw it into the water, and then the trap had caught first an eel, then a dogfish, a perch, a silver perch, a cohoes salmon, a dog salmon, a humpback salmon, a steel-head salmon, a spring salmon, and finally a sī′siuL. Then he said, "That is it; that is it!" and he was glad. He took the sī′siuL out of his trap and put it down on the rock. He broke off hemlock branches, laid them into his canoe, and put the fish on top of them. Then he went home to his house at

[1] Appendix, page 725.

Qā'logwîs. He went ashore to his house. His mother was lying down. Then Mink spoke: "Don't stay here, grandmother, but carry my fish into the house." His mother went down to the beach. She went to the canoe and looked in vain for the fish. Her body became contorted; her head looked backward, because she had seen the sī'siuL. Mink waited for his mother a long time. Then he arose and went to look for her. He found her, and saw that her whole body was contorted. "That is the way, grandmother! Are you so glad?" He took her and straightened her body. He carried the sī'siuL himself from the beach to the house. He put it into a box. It became evening. The people intended to bring back the novices that night. In vain they beat the boards for the expected ones. They had been killed by Mink.

The people were still singing in the house. One of the chiefs said, "Let us try, dancers, to bring back our novices." But when they did not come after numerous attempts, one of them spoke: "Dancers, we are not going to succeed in bringing back our novices." One of them replied, "Wash yourselves, friends." Then the last one spoke: "You who are not initiated, turn your faces toward the rear of the house. We will go in before dark." Then the people thought they would have to give up trying to bring back their novices. They listened, but did not hear the arrival of the supernatural power.

Up to this time Mink had not made his appearance. Then the people said, "What is the matter with our chief K·ēx· (mink)?" They went to fetch him. Now Mink, and his cousins the raccoon, the killer whale, and the squirrel, did what they had planned. His sister Ts'E'stayūkoa and the raccoon went and pulled out a board in the rear corner of the dancing house. The raccoon sat down in that corner. Now K·ēx· came in. He danced a little while and went out again. Then he came in and danced again with his sister. He sang,—

Spread your legs, Ts'E'stayūkoa,
Spread your legs, Ts'E'stayūkoa,—

and jumped through between the spread legs of his sister.

Then he came in again. He wore the heads of the wolves for his mask. But he was hiding them behind his blanket. He sang:

Mink is wearing the middle of the face of the sons of the chief of the wolves.

He went out again; and when he came in, the heads of the wolves were attached to his blanket. Now the people tried to kill him, because they saw that he had killed the sons of their chief. Then he went out of the doorway in the rear while his friends the squirrel and the raccoon were beating the drum. He came in again wearing the sī'siuL mask. As soon as he entered the door he uncovered the mask, and all the people died in convulsions when they saw it. Then K·ēx· selected all his relatives and the people whom he liked and resuscitated them. That is the end.

The initiation of members of the lower grades of the ts'ē'tsāēqa is not attended with as elaborate ceremonies as that of the la'xsâ.

Their initiation is called kuē′xalakᵘ. Those who are initiated by the kuē′xalakᵘ ceremonies are called g·ixsēg·i, that means, leaning against the wall of the mā′wiL. In most cases they return from their initiations during the festivals celebrated to bring back a novice of the la′xsâ. Sometimes, however, while the people are assembled at a feast, the wi′xsâ or kuē′xalakᵘ novice is taken away by the spirits, and then his father announces that four days hence he will be brought back. He calls the master of ceremonies of the kuē′xalakᵘ, who wears a head ring ornamented with five feathers,—one in front, one on each side, and two in the back. His face is painted red. He enters and begins to go around the fire, swinging his baton from the elbow. When he reaches the rear of the house, he turns around, swinging his stick, and then gives one rap on a board, crying at the same time "ha′mamamama" (very rapidly). As soon as he does so, all the people strike the boards. Meanwhile the master of ceremonies turns around, strikes the board again, crying "hamamai′." Again all the people strike the boards together and cry "ha′mamamama." These cries represent the sounds made by the ghosts. The master of ceremonies continues his circuit, swinging his baton all the time. When he reaches the door, he turns again and proceeds. When he reaches the rear of the house the second time, the same ceremony is repeated. He continues his circuit in the same way as before. When he reaches the rear of the house the third time, he turns and cries "yēhēē′" and gives a rap on the boards; then all the people cry "yēhēē′hōōōō." This represents the sound of the wolf. While the people are beating time the master of ceremonies turns again and then strikes the boards, crying "yēhēē," drawing out the last syllable as long as possible. Then the people strike the boards all at the same time and repeat his cry.

The master of ceremonies goes around the fire the fourth time, and when he reaches the rear of the house, he turns and cries "wōwōwō" or "wōē′p." Then the people beat time and say "kf" (the f drawn out very long). This is the sound of Hai′alik·ila. During this time the whistles of the ghosts are heard continuously.

When the master of ceremonies turns the last time, he smiles at the people, strikes the board, and cries "wō," to which all the people reply "hää." The ceremonies of this evening are called lōL.

Now the chief steps forward and says, "This is finished, friends; bring in your boxes."[1] While he remains standing, those people who are willing to bring boxes leave the house and soon return carrying them on their shoulders. The lids and ropes of the boxes are thrown into the fire. The boxes are placed in a row in the rear of the house, the openings turning backward. Then the yē′wix·ila asks one of his relatives or his daughter to dance. He holds a large staff in his hand, which is called qā′sōp'ēq or "feast staff." He promises to celebrate the winter dance; and calling up his father-in-law says that he was compelled to

[1] Wā nēnEmō′kᵘ, g·ā′xLax·îs t'ā′miatsē LaōS nēnEmō′kᵘ.

celebrate the winter dance without having had previous knowledge of what was coming, and requests his father-in-law to repay him for the property with which he was presented at the time of the marriage of his daughter. The father-in-law rises, asks the young man to give him the staff, which he grasps in the middle, holding it horizontally. Then he calls his friends to take hold of the staff with him. By doing so they pledge themselves to help the old man to repay his son-in-law. He says how much he is going to pay to his son-in-law and returns the staff to him. Then the latter takes it and carries it, pretending that it it is exceedingly heavy, saying, "ō, ō, ō, ō!" It is supposed that the property is attached to the staff.

The father-in-law asks: "When will you want me to pay you all this property?" And the young man says that he wants it by the third day. The following days the people are invited to feast and to dance in the chief's house. A sail is stretched across the rear of the house. The seal society have their seats close to this sail.

Now the master of ceremonies rises and calls one man (the mā′mɛ-nats'ēnôx), whose office it is to look after the drum. This office is hereditary. The master of ceremonies says: "Go and bring your inheritance." The man rises, steps up to the fire, goes around it, leaves the house, and soon returns carrying the drum on his shoulder. He stops in the doorway, turns around silently, and walks around the fire four times. He stops finally in the left-hand rear corner of the house, where he puts down the drum on its flat side. He carries a small whistle in his mouth and every time he pushes the drum he blows the whistle. It is of course supposed that this sound is produced by the drum. Then he says, "It is done; I have brought my inheritance." The master of ceremonies asks, "Did you bring the baton with you?" To which the man replies, "My grandfather has been dead so long that I forgot this part of my inheritance." He is sent to fetch it, and walks out of the house and returns in the same way as the first time. He deposits the batons in the middle of the rear of the house, and every time he moves them he blows another whistle.

Then the master of ceremonies calls another man, whose office it is to look after the eagle down. This office is also hereditary. He goes out in the same way as the other officer, and soon returns, carrying a painted bag filled with down. He says, "Here is the bag which my grandfather left for me to take care of." He walks around the fire four times, turning in the front and in the rear, and finally deposits it in the right hand front corner of the house. Then four men take four dishes, each takes one handful of down out of the bag, and puts it into the dish. The down is pulled apart so that it fills the dishes entirely. The owner of the down shakes his bag, which then appears to be quite full again, and carries it back. It is supposed that the bag always remains full. Then the master of ceremonies takes up one of the dishes and asks his brother, who is chief of the quē′qutsa, to take

another one. The name of this office is dā′sqamē xa kuē′xalakᵘ, holder of the kuē′xalakᵘ. The officer has the name Q'E′mtq'atas.[1] Two other men take the other two dishes and they walk around the fire once. Then they begin to strew the down on the heads of the people. The master of ceremonies begins either with the ha′mshamtsEs or with the bear-fool dancers (nE′nq'oLEla) (see p. 499 No. 16). Then he gives eagle down to the fool dancers and to all the other dancers.

Then the master of ceremonies goes around the fire again, swinging the baton. He stops in the rear of the house and strikes a box. All the people imitate him. Then a number of women, who are hired for the purpose, begin to dance. The people sing one song for each of the women. After this dance the chief of the quē′qutsa promises a feast for the next day, and the people go home.

The next morning a number of quē′qutsa go around from house to house to invite the people for the feast. The same women who danced the first night, dance this evening. Again a feast is announced for the following day. On this day all the dancers who are allowed to wear masks enter first and arrange themselves behind the sail, wearing their masks. Then the people enter, last of all the master of ceremonies, wearing his cedar bark ring, his face painted red. Again he swings his stick from the elbow, turns in the house, and says "wôi wôi," and strikes the box. Then all the people beat the boxes for about ten minutes. Suddenly the master of ceremonies stretches out his arm and swings the baton slowly all around. The people stop beating time at once. He continues swinging his baton, and swings it faster and faster. Finally he beats the box again, and again all the people begin to beat time. Now the dancers are heard behind the curtain, each with his peculiar sound. The curtain begins to shake and is lowered, all the masks standing behind it. This is the end of the celebration of the third night. Again a feast is promised for the next day. This evening the same ceremony is repeated, but after all the masks have appeared in the rear of the house, the young person who had disappeared in the beginning of the ceremonies comes out from the right hand rear corner of the house. He sings his new song and dances. Then his father brings out all the property given to him by his father-in-law and distributes it among the people. Bracelets, coppers, and spoons are given to the women and children. Silver bracelets, kettles, and box covers are given to the men. Before the people go home the chief promises another feast.

The following day the people assemble again, and a feast is celebrated, in which everybody takes part. Before they begin to eat, the host brings all the button blankets which he has received from his father-in-law and distributes them. The women receive white blankets.

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[1]According to tradition, the first man of this name invited the people to a feast, but, instead of feeding them, only taught them four songs. The name means, eating songs.

This is called a present to wipe the mouth with (dā′yaxstanō). Each person receives one dish and spoons, which they take home after the feast. After this feast the novice receives his name. Then the people leave the house. The purification of the novice is performed in the same way as described above (see p. 532).

Sometimes the kuē′xalakᵘ begins with a curious contest between the ts'ē′tsaēqa and the profane. This ceremony is used by the Kwakiutl, Ma′malēleqala, Nimkish, Lau′itsîs, T'Ena′xtax, Ts'ā′watEēnôx, Axuā′-mîs, Qoē′xsōt'ēnôx. The tribes forming the Newettee and Koskimo group use the ghost dance in its place. Mr. George Hunt told me the following instance of the performance of this ceremony:

The Q'ō′mk·ūtīs, Walas Kwakiutl, and Kuē′xa had celebrated the ts'ē′tsaēqa without inviting the Guē′tEla, the highest of the Kwakiutl tribes. Then the chief of the last-named tribe called all his people together into his house. He put up a long pole, the "winter dance pole," leaning it against the beam of his house, and asked his people, "Are you glad to hear the winter dance going on at the other end of our village while you are asleep in your houses? If you want to remain bā′xus, do so. If you want to join the winter dance, then one of you step up and touch this pole." As nobody stepped up to touch the pole he put his hand on it himself and said: "I will be the yē′wix·ila; but first let us all turn ourselves into dogs" (wā′tsē; in the ordinary language, waō′tsē). Then all his people took off their clothing, even their earrings and anklets, the women keeping only a small petticoat. They blackened their faces and hands and painted men's and dogs' faces all over their bodies. Then they cut the winter dance pole in pieces about a fathom in length each. The chief ordered them to cut a hole in the rear wall of the house. After this was done, they went out secretly and from the rear approached the house in which the other tribes were celebrating their winter dance. Then they barked like dogs, broke through the rear wall of the house, and drove out all the dancers, including even the hā′mats'a. They broke the canoes and all the belongings of the dancers. This was their revenge for not being invited to the festival. This ceremony is called wā′ts'axt, which means, dogs running from one house to the other.

Now the ts'ēt′saēqa assembled on one side of the street, while the "dogs" or the bā′xus assembled opposite them. The chief of the Guē′tEla, standing in front of his tribe, asked the yē′wix·ila of the other tribes, "Can you throw the supernatural power among us?" Then the ts'ē′tsaēqa began to beat time, the quē′qutsa and mē′emqoat all standing together. Then the t'ō′X'uît with the frog stepped out from among the ts'ē′tsaēqa and danced like the mā′maqa, trying to catch his supernatural power. After some time she apparently caught it in her hands and threw it against the "dogs." The first throwing is called the daE′lkᵘ (dEdā′LElaL, Newettee dialect), which means laughing. The dogs laugh and bark all at the same time.

Then the ts'ēt'saēqa beat time again. Again the dancer caught his supernatural power, went four times forward and backward, turned around, and threw it against the dogs. Then they sat down, still laughing, and began to scratch their heads. Again they barked. The ts'ē'tsaēqa beat time for a third time, and the dancer caught the supernatural power again. She went forward and backward with quick steps, turned around, and threw it again. Then the dogs rushed into the water, scratching and rubbing their bodies, which means that they are removing the bā'xus from their bodies. They barked and came out again.

Now the quē'qutsa of the other tribes assembled in a group by themselves and sent four men to the dogs, apparently to send some message, but actually in order to carry to them some red cedar bark. After they had returned, the dogs in their turn sent four of their number to fetch some more cedar bark. This is repeated four times, and is called ts'ā'ts'ēxsila—that is, pretending to carry messages.

Now the chief of the quē'qutsa spoke to his people: "Take care; don't give in, and remain what you are." All his people arose. Then the quē'qutsa beat time again, and the dancer continued her dance. Suddenly she was seen to hold red cedar bark in her hands. Four times she went backward and forward holding the cedar bark and moving her hands up and down. She turned four times, and every time stretched her hands out as though she was going to throw the cedar bark against the "dogs." The fourth time she really threw it. Then all the people stooped, and when they arose again they had cedar bark rings on their heads.

Then the hāmats'a, nū'LmaL, nā'nē, and the other mē'emqoat of the Guē'tEla began to get excited. The chief pushed his son toward them. They surrounded him and dragged him around until all of a sudden he disappeared. Then it was said that the supernatural power had taken him away from the hā'mats'a. This novice was now kuē'xalakᵘ. The chief next invited all the "dogs" and the ts'ē'tsaēqa into his house and announced that after four days he was going to try to bring the novice back. This is called wā'sdana qap'ē'kᵘ, or short assembly, and takes the place of the qap'ē'kᵘ ceremony described above. The kuē'xalakᵘ then continues as described before.

X. The Winter Ceremonial at Fort Rupert, 1895–96.

In the preceding chapter I have given a general description of the ceremonial of the initiation of a single novice. When the ceremony is actually in progress, there are several novices to be initiated, feasts are being held, and numerous incidental ceremonies are performed which depend upon circumstances, such as atonement for mistakes, rivalry between chiefs, and so forth. In order to make clear the character of the ceremonial, I will describe in the present chapter the ceremonial as it actually took place and so far as I witnessed it in the winter of

1895–96. At that time three tribes had assembled at Fort Rupert (Tsā′xîs)—the Kwakiutl, the Koskimo, and Nā′q'oaqtôq. The Koskimo included also the G·ō′p'ēnôx, L'ā′sq'ēnôx, and Gua′ts'ēnôx. I reached Fort Rupert on November 15, 1895, and shall record here what I saw.

On the 16th of November one of the Nā′q'oaqtôq gave a feast. The Kwakiutl had their seats in the rear of the house, the Koskimo at the right hand side, the Nā′q'oaqtôq on the left hand side. When all had assembled, the chief speaker of the Nā′q'oaqtôq said: "Welcome, friends. Now that you have all come in, take the handles of your batons and sing."[1] Then the batons were distributed. Planks were laid for beating time. While the people were still coming in, one of the quē′tsEm (quē′qutsa) began to tease a fool dancer, who intended to give up his dance and to become a quē′qutsa. He pulled his nose, rubbed it with snow, and threw snowballs at it. As stated before, the fool dancer is supposed to have a long nose, and to resent all allusions to the nose. He does not allow it to be touched. The quē′qutsa tried in this manner to excite him so as to prevent him from leaving the seal society and becoming a quē′qutsa. Finally, a number of quē′qutsa joined the first quē′tsEm. They pulled the nose of the fool dancer, spat on it, and smeared it with grease, notwithstanding his endeavors to escape them. Finally, they tied him to one of the house posts and continued to maltreat his nose. Now the Kwakiutl sang two songs. They were followed by the Koskimo, who sang two songs in their turn. Meanwhile the meal, which consisted of soap berries, had been prepared, and the speaker held up a dish which was intended for the first hā′mats'a. He shouted: "This is the dish of Yaqoîs."[2] The dish was carried to him. The members of the seal society received their shares in order, next the women, and finally the quē′qutsa. Now the host turned to the fool dancer who was tied to the post, and whom the people were teasing again. He said: "I will ask your friends to stay at their places for a little while because I am cooking for you, and wish to feed you." Then several of the fool dancers came to his assistance. They licked the grease off from his nose, untied him, and took him back to his seat. As soon as the dishes were distributed, the host's assistants began to prepare the second course, which consisted of rice. While the people were eating, the different societies uttered their cries:

"The hens are pecking!"[3]

"The great seals keep on chewing."[4]

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[1] G·āxmEns nēnEmō′kᵘ wī′laēLela. Wai′g·a d'axLā′liLaxs t'ā′miayu qa s
We came friends all in the house. Go on! take at the handle the batons for to
lā′g·ustâlag·aōs, nēnEmō′kᵘ.
go upward (sing), friends.

[2] Lō′qulas Yā′qoîs.

[3] IEnLā′Lg·a qaqaqāō′.

[4] Yā′laLxōLax· qamk'oaLg·a mē′emkoatsē′k·

"The food of the great killer whales is sweet."[1]
"The food of the foolish boys is sweet."[2]
"The great rock cods are trying to get food."[3]
"The great sea lions throw their heads downwards."[4]
The Mosmos said: "It will be awful."[5]

When uttering these cries, the members of the societies lifted their spoons and seemed to enjoy the fun. Next, the Koskimo (tribe) lifted their spoons and all cried "yū." Then they ate as quickly as they could, and all the different quē′qutsa societies vied with each other, singing all at the same time.

Next, a man arose who acted as though he was a Haida. He delivered a speech, during which he made violent gestures, imitating the sound of the Haida language. An interpreter who stood next to him translated the pretended meaning of his speech, which was supposed to be of the nature of thanks to the host for the soap berries, because they were one of the principal food articles of the Haida, and because the speaker was pleased to eat the kind of food to which he was accustomed in his own country. He continued, saying that he carried a box filled with food which he was going to give to the person who would pronounce his name. Then the host's daughter was called upon, and was asked to say his name. He began, G·a′tsō, which she repeated; Sē′as, which she also repeated; then followed, spoken very rapidly, Qoagā′ñ Gustatē′ñ Gusgitatē′ñ Gusoa′t Qoag·ê′ns Qaqā′xsla.[6] Then she said: "I can not say this; I must go to school in order to learn it." The Haida asked her to go to school with him for four nights; then she would know it. The girl's father interrupted them, saying that he wanted to wash his daughter before she went to school with him.

Now the Kwakiutl and the Koskimo sang two songs each, before the rice was dished out. After the songs the host's father-in-law, who had contributed the rice for the feast, spoke as follows: "O, friends! I have not finished giving food for the marriage of my son-in-law to my daughter;" and turning to his son-in-law, he continued: "Don't say that word. Don't refuse my kind offer, else I shall be ashamed. I do not do the same as other people, who only pretend to give feasts, giving only to those who have to buy my property from me."[7]

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[1] Q'ā′xaaX'wīst'ag·a maa′mx'ēnôxtsēk·!
[2] Q'ā′xaaX'wīst'ag·a naanE′Xsōkuēk·!
[3] Yā′laLxōLak· hā′mēk·aLg·a t'ō′t'opatsē!
[4] T'ā′wiqasg·a L'ēL'êxêntsē!
[5] Ā′dzeg·anEmLtsē.
[6] This joke has been known for about eight years, and is often repeated.
[7] The son-in-law had hesitated to accept the rice for this feast and the old man referred to this fact.

Qä′LEn, nēnEmō′kᵘ, g·ā′mala wē′sEn wī′wosilaqa, g·ī′LEn k·'ē′tsEnaē qoā′LqoaLa
Yes I friends, for this reason not I poor, as I finished
wā′waLgila xEn nEgu′mpē. Qoā′la nē′k·ōL, qoā′la nēk· sēs wā′LdEmōs.
giving food at the time of marriage to my son-in-law. Don't say, don't speak that your word.

While the rice was being eaten a man arose and announced that he was going to buy a copper from Ē′wanūXtsē. The latter replied, but in his speech he made a mistake, naming the summer name of a person. He was interrupted at once and compelled to sit down.

November 18.—In the morning the Kwakiutl assembled in their secret meeting place in the woods. A new bear dancer and fool dancer were to be initiated in the evening and the plan of the festival was laid out. At the same time the song makers taught the people the four new songs which the father of the new bear dancer had bought from them, and which were to be sung in the evening. Then ƛa′lɣaxōla, who was going to give the dance, made the following speech:

"Now come, my tribe, come Nu′xnēmîs, come Hō′LElitē, come LE′mg·ala, x·ī′xak·ala, and Nēnau′alakuēla. Now I will make my speech on this place of my friends. I will let you know my heart, friends. We will begin to beat the boards this night. You shall begin the songs, Dē′mîs, and you Waxsɣanulisax, and you NaXualīsax, you song makers. That, Ts'a′qamē and Gō′koayū, is all that we say to our friends."

Then NE′msqemūt arose and answered: "I am the one who was struck by the words of our friend." All the men who were sitting on the ground, said: "Go on!" He continued: "Now come! Listen to the speech of our friend on this ground and take care else the secret of our song makers will be known. I say this, Nu′xnēmîs and Hō′LElitē. Take care, friends. I say this, LE′mg·ala, I say this, x·ī′xak·ala."

Then the song makers sung and put words into the old songs. Now the song maker finished. Then the men who gave the ceremonial told how many dancers there were to be and how many songs. Now he finished. Then the song maker took as many sticks as there were to be dancers, and gave them to him. Then the man who gave the ceremonial named each dancer and said: "This will be the song of Gā′yax-stalasas," and pushed one stick into the ground. Then he called the name of another one and put a stick into the ground. He put down as many sticks as there were women who were to dance.

When he had spoken, LE′mg·ala arose and asked his tribe: "How will you dress?" The chief of the killer whales, Qā′quLayī, arose and said he would go with his friends, and the chief of the policemen, Gū′-kwayu, arose and said he would go with his men and they would dress. LE′mg·ala was standing all the time while the people were speaking. After they had finished, he said: Now, Qā′quLayi, now Gū′kwayu, you have finished your speeches. I thank you. Why should you be

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Qoā′la Lā′qoa xEn nâ′qaē qa s a′LEn ana′xtsala. K·′ēsEn hē′qag·ilē da bEgwā′nE-
Don't push back my heart for else I ashamed. Not I do thus the (other)

maxs k'uē′k'uaxâlaē Lawîs ʼIā′walaqâlut. Hē′imēq nēnEmō′kᵘ
men who merely pretend to do (to give feasts) and the one who has to buy my wealth. That is it friends

qants nē′k·a. Wā!
we say. Wa!

ashamed, friends? We do not need to be ashamed of what we are doing here in the woods."

He continued: "Now take care, members of the seal society! put on your painting of charcoal. Take good care of what we are doing in the house; if anything should happen to one of our masks you must get excited. Wa, wa!"

After their return they were invited by one man of the tribe to a seal feast in which the Nā′q'oaqtôq and Koskimo did not take part, because seal feasts are considered a privilege of the noblest tribe, namely, the Kwakiutl. The seal was singed and boiled. Then the skin with the adhering blubber was cut spirally all around the body, and handed to the men who stood up all around the house. They received about a yard of blubber each. Then the host made a short speech; and after the four feast songs were sung, they all fell to. After the blubber was dispatched, the meat was distributed in dishes and eaten.

In the evening the father of the new bear dancer gave a feast. The Kwakiutl sat in the rear of the house, the Koskimo on the left hand side on entering, the Nā′q'oaqtôq on the right hand side. When all had entered, the members of the seal society came in—first the bears dressed in button blankets. They had bears' paws on their hands, put on like mittens. They remained standing in the door and looked around wildly. The next to enter was the Ts'ō′nōqoa, who, according to the tradition, is sleeping all the time. She had her eyes closed and attempted to go to the rear of the house, turning to the left, while the customary circuit is to the right. One of the messengers who was stationed in the door took her by the arm and led her to the right. A rope was stretched from the door to her place, along which she walked to her seat in the rear of the house, feeling her way by means of the rope. The next to enter were the fool dancers. While they were going to the rear of the house a loud noise was heard outside. They pretended to be afraid, hid their faces among the people, and hastened to their seats in the rear of the house. The noise came nearer, the door opened, and in came the killer whales, young men and boys, dressed in blankets and having long carved fins attached to their backs. Some of these consisted of a sheath in which a carved board was placed so that it could be pulled out and dropped back by means of strings, thus giving the appearance of a fin which was alternately lengthening and shortening. The men came in stooping down low, so that the fins stood upright. They blew like whales, turned in front of the fire, and slowly went to the rear of the house, leaving the fire to their left, stopping and blowing on their way. After they had made one circuit they disappeared again. Next, a number of people came in, spreading their blankets and imitating motions and voices of ducks. They went to the rear of the house. As soon as all had assembled the people began to sing. Suddenly a man holding his young son on his arms rushed out of the right hand rear corner of the house, ran around the fire uttering the cries of the nū′L-

maL "hi, hi, hi, hi!" and pushing right and left with a dagger which he was carrying. At the same time he smeared his son's face with the mucus of his nose, thus "imbuing him with the sacred madness of the nū'LmaL." The poor child was frightened, and cried piteously during the ceremony. This was his initiation in the nū'LmaL society. It happened during an interval between the four songs which were sung before the meal.

After the people had eaten, the bear rushed out of the same corner whence the fool dancer had come. He was dressed in a bear skin and came out on all fours, pawing the ground, growling, and looking wildly upon the spectators. The people began to sing the first of his new songs, and eighteen women danced accompanying the song, in order to appease his holy wrath. The songs pacified him, and he disappeared again in the corner of the house from which he had come and where he is supposed to be initiated. After this the second course was served, and then the people dispersed, each lighting his torch and wending his way home along the dark street or down along the beach and up the narrow bridges which cross the stream leading from the beach to the street. Soon the glimmering lights disappeared in the houses, where the fires were tended before everybody went to his bedroom to enjoy the rest.

On the 19th of November the first hā'mats'a gave a feast of salmon and berries. Early in the morning he himself, accompanied by the seal society, went from house to house, their faces blackened, and dressed in their various ornaments—the fool dancers with their lances, the bears with their enormous paws. The fool dancers knocked at the doors with their lances. Then they entered and invited the people with the same words as are used at ordinary occasions. But they did not raise their voices; they uttered the invitation in a low growling tone. Whenever the name of a person was mentioned the meaning of which in some way offended the bears, they pushed the speaker—one of the fool dancers—so that he almost fell down. While the names were being called, the members of the seal society looked around angrily.

Generally four calls are necessary to convene the people, but the seals do not allow them to tarry. After they had called the first time, they went around apparently offended by the tardiness of the people. They carried a long rope, entered the houses, and the fool dancers pushed the people from their seats with their lances. The bear dancers scratched them and drove them towards the rope, which was stretched tightly. Then the members of the society who held the rope pushed the people out of the house on to the street. After having arrived on the street, they drove them before the rope until they reached the dancing house. Thus it did not take very long to bring the people together. About 3 o'clock in the afternoon they began their second call, and at 4.30 p. m. all the people were assembled. As the host belonged to the Kwakiutl tribe, the Koskimo and the Nā'q'oaqtôq

had the seat of honor in the rear of the house where the seal society is generally sitting. The Kwakiutl sat to the right and to the left of the door. The members of the seal society and the relatives of the host were standing near the door tending the fire and preparing the food. As soon as all the people were assembled, the seals placed two logs in front of the door, over which they laid a plank. The hā′mats'a and two fool dancers took their seats on the plank, thus preventing any of the guests from leaving the house.

About this time Hō′LElitē, the speaker of the Guē′tEla, arose and asked his debtors to pay his debts.[1] He said: "Now I beg you to please me and to pay my humble debts;[2] then calling the names of those whose debts were due. One of the latter arose and promised that all would pay on the following day. These debts had been contracted a year before the feast, and therefore became due by this time.

Hō′LElitē continued speaking. In behalf of the seal society he thanked the people that they had come to the feast. He called up four men to distribute eagle down. Then they took up the down, which was placed in four dishes, and put it on to the heads of the assembly. Now he asked the people to sing and to beat time, and four young men distributed the batons. The seals continued preparing the food, while the Koskimo and Nā′q'oaqtôq sang two songs each. The bears had their paws on; the fools carried their lances while they were preparing the food. One of the bear dancers was being led by a rope which was held by one of the fool dancers, in order to prevent him from getting excited and attacking the people. During their songs one of the Nā′q'oaqtôq women danced in the rear of the house.

After they had finished singing, the speaker of the Nā′q'oaqtôq arose and said: "The Kwakiutl do not look properly after the winter ceremonial. But now they shall see that we know well how to arrange our ceremonials." He took off his head ring, called his cousin Qā′snōmalas, and gave him the ring, asking him to go around the fire and to look for someone who had no red cedar bark ornaments. Qā′snōmalas took the ring and went around the fire, turned once in front of the door, and continued his way to the rear of the house. There he put the ring around the neck of his cousin, NE′msqEmk·ala, who had just arrived from the Nā′q'oaqtôq village, and who therefore had not taken part in the opening ceremonies, when everybody received his ornaments of bark. As soon as he had received the neck ring, he arose and danced as

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[1] ʟa′Xts'âliL qōqu′na = standing in the middle of the house asking for payment of debts.

[2] Ē′smaēLEn hawā′x'alōL qa s wax'ē′daōs g·ā′xEn lā′xEn g·ā′g·imäoL MaamXnitai′
Not now I beg you for to please you me to my small debts MaamXnit
ʟaoX Q'ēq'anqula yūmisōX Tsā′xisaq'a yū′Em xaawisōX LA′lēLk·'atstōdalä′x yūEmisa
and Q'ēq'anqula and he Tsā′xisaq'a he also LA′lēLk·'atstōdaläx he
ā′dêx LĒ′LtsÎs. Hē′iEm wa′xē.
dear LĒ′LtsÎs. That is all.

In modern speech the first word would be K·'ē′smaēLEn.

ha′mshamtsEs. After he had danced, his father, T'ē′t'ēsumx·tsana, arose and promised to distribute blankets. NE′msqEmk·ala's wife asked her speaker, Qoē′neqoiL, to speak for her. He held a silver bracelet in his hands and promised in her behalf that she would give to her husband four sticks of silver bracelets, ten bracelets to a stick, and button blankets as many as were needed for a festival which he was going to give. Then Qā′snōmalas took the blanket and T'ē′t'esumx·tsana took the bracelet. The latter spoke: "This is my way. No other clan can equal mine; no chief can equal me. I always distribute all my property." Then Qā′snōmalas interrupted him and said: "Don't say too much! You have made me your speaker and taught me not to mind others in what I am doing. You have made me happy. Therefore I shall sing." Then he sang two songs which expressed his happiness. After his songs he said: "That is enough. I sing two songs for what you have promised me to-day. I shall sing four songs when you will promise me a copper." He thanked his uncle's wife for considering the noble position of her husband and helping him to keep that position. He announced that he would distribute the bracelets and button blankets among the four tribes of the Kwakiutl. "Ya Koskimo," he said, "follow this way, follow my way. Don't lock up your boxes; keep them open as I do. Thus I have become higher than any other man. I always put my property into a box with red-hot bottom.[1] Let both our tribes strive against the Kwakiutl, so that we may take off two finger widths of their highness."[2]

By this time the salmon was done and was put into long flat dishes and fish oil poured upon it. The fool dancers and bear dancers distributed the dishes and the wooden spoons, every three or four people receiving one dish. The Koskimo and Nā′q'oaqtôq were given first, the Kwakiutl last. Etiquette demands that the guests eat as quickly as possible. Whenever the bear dancers and fool dancers saw a person eating slowly, they went up to him and pushed and scratched him. During all this time a huge fire was being kept up in the middle of the house and grease was poured into it. The flames leaped up to the roof of the house, which every now and then caught fire, so that a man had to be sent up to extinguish it. It is considered improper for the guests to mind such fires, and apparently no notice is taken of them until the host deems it proper to send up to the roof. He sometimes disregards the fire until it has attained quite considerable dimensions.

As soon as the people had finished eating, the chief fool dancer, who is the speaker of the hā′mats'a, tried to deliver a speech. But it is

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[1]That means, as water is scattered by being poured upon red-hot stones, thus his blankets are scattered among the tribes as soon as they fall upon the red-hot bottom of his box.

[2]The Kwakiutl are counted as high as four finger widths, as they consist of four tribes. The other tribes are each only one finger width high. Of these, the Nā′q'oaqtôq and Koskimo wanted to have each one, in order to become as high as the Kwakiutl.

customary to interrupt him. Whenever he made an attempt to speak, the people raised a great din, which compelled him to stop. He pretended to get angry and threw stones at the people. At this time he ordered the members of the seal society, of which he himself is a member, not to eat of the salmon, as a number of fish were set aside for them. When a number of fool dancers and bears began to eat, notwithstanding his commands, some of the other members of the seal society took the food away and pulled them back. After all the guests had eaten, a large dish was placed on the plank which was laid in front of the door. The hā'mats'a ate out of the dish, while the other members of the seal society ate out of large kettles which were standing near the fire. Then all the people laughed at them because they ate after the others had finished, although they are the highest in rank among the whole tribe and ordinarily receive their share first. When the people were teasing them, the friends of some of the members of the seal society stepped before them, spreading their blankets, thus hiding them from view, so that the people should not see them eating.

Now Hō'LElitē arose again and spoke: "This is the way of my chief. He gives a large feast on account of the nobility of my tribe." He asked the people to take the batons and to sing. The Nā'q'oaqtôq commenced and sang two songs. The Koskimo followed with four songs. In the fourth song the word "raven" occurred. As soon as it was heard, one of the hā'mats'as of the Koskimo became excited. He jumped up, crying "hāp, hāp, hāp," trembling all over his body. His attendants rushed up to him, the people beat time violently, and the drummer beat the drum, while the hā'mats'a tried to rush up to the people and to bite them. But he was held back by his six attendants. Slowly he moved to the rear of the house, where he went once to the left, once to the right, then continuing his course around the fire. When he came to the door, he went out, followed by his attendants. Then the Koskimo called four times, "yū!"

While this was going on, NEg·ē'ts'ē, speaker of the Koskimo, arose, and as soon as quiet was restored, he spoke: "Take care, my tribe; the supernatural power has entered our hā'mats'a Nau'aqîs;" and turning to the Kwakiutl, he said: "Be ready, friends, you on both sides of the house; we will try to tame our hā'mats'a." This was said at the moment when the hā'mats'a ran out of the door. His attendants returned after an absence of about ten minutes.

Now a number of large carved dishes were brought in, one representing a bear, the other a sea lion, and others other animals. They were placed in a row in front of the fire. Then Hō'LElitē arose again and with him Amā'x·idayu, an old speaker of the Guē'tEla. Hō'LElitē spoke, calling the host's bā'xus name, NEmō'gwîs, and pointing to the bear dish said: "This is NEmō'gwîs's dish, which was used by the first NEmō'gwîs when he gave a grease feast. He used a dish like this one. He also used this second bear dish and a wolf dish and a killer whale

dish." Then he called up Nō'LqʼauLEla, the father of NEmō'gwîs. "Speak yourself regarding your own dishes." Nō'LqʼauLEla called up his mother, Mō'sqEmXLala. He asked her to give to his son some of her father's dishes. Then she pointed out a bear dish and a dish representing the sea lion's stomach. He continued, asking her for some of her mother's dishes. Then she pointed to a killer whale dish and to a wolf dish. He spoke: "Friends, my mother has some more carvings, but I do not want to give them to my son as yet. First I want to give another feast; then I shall give them to my successor. That is all."

Then Hō'LElitē spoke again: "Did you hear what my chief said? He said that he wants to use the dishes before giving them to his son. That means he is going to give another feast. Hu, hu, hu, hu, hu," and all the people repeated this cry. The fool dancers and bear dancers took the dishes and carried them to the guests. Hō'LElitē called: "This is the dish of the troublesome ones.[1] This is the dish of Ts'Eqolag·ilis.[2] This is the dish of the cormorants.[3] This is the dish of the rock cods and bears.[4] This is the dish of the whales for whom one waits.[5] This is the dish of the gulls.[6] This is the dish of the pigs."[7]

After all the large dishes had been distributed, the small dishes were carried to the women and to the young people. While all were eating, Hō'LElitē remained standing and asked the Kwakiutl to sing. They assembled in the door, and after having placed a plank on two logs they sang, standing, the feast song of the winter dance. As NEmōg'wîs had no daughter, his grandmother and his father danced, accompanying the song.

After they had finished singing, Hō'LElitē spoke: "Ya, friends, this is the way of my chief. He does so not only this time to show his greatness, but he always acts this way. Eat and swallow what is given to you as well as you can; eat it all. Bring our food and we will feed the chiefs." Then the members of the seal society brought a barrel filled with berries and placed it in front of Hō'LElitē. While carrying it they cried, "ū, ū, ū, ū, ū," indicating that the barrel was exceedingly heavy. Then they brought a number of large wooden ladles. Hō'LElitē dipped berries out of the barrel, and said, "Now sip, NE'msqEmk·ala,"[8] and the ladle was taken to him. He drank, and when he was unable to empty it he poured the rest of the food into his dish. Thus the ladles were carried to all the chiefs. After all had received their share, Hō'LElitē spoke: "Oh, tribes! I do not do so once only; I often give feasts of this kind. That is why we are called Kwakiutl—that means the smoke of

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[1] Wu'n'awunx·îs, the society of the Nā'q'oaqtôq, which embraces the secret societies hā'mats'a, bear, and mā'maq'a, and corresponds to the seals of the Kwakiutl.

[2] The wolves and hā'mats'a of the Koskimo.

[3] L'ō'L'Epana, chiefs of the Nā'q'oaqtôq.

[4] T'ō't'ōpa, nā'nē, chiefs of the Koskimo.

[5] ĒsElā'liLtsawe qoayî'm, the young men of the Nā'q'oaqtôq.

[6] Ts'ē'ts'eg·inaqa, elder boys of the Nā'q'oaqtôq, who fetch fuel, etc.

[7] Guē'gusōa, eaters, middle-aged men of the Koskimo.

[8] La'ams Xu'mt'ēLax NE'msqEmk·ala.

the world. All the tribes try to imitate us, but I have not seen anyone who has been able to do as we do." Then all the people said, "True, true!" Next NEmō'gwîs's father, Nō'Lq'auLEla, spoke: "Look at me; look at my son! You shall not call me chief on account of what I am doing, but call my son chief, because I am doing it for his sake. I am working for him; I want to make him heavier all the time."[1] Then he asked one of the Nā'q'oaqtôq chiefs, who had expressed his intention to leave, "Is it true that you are going to leave? If you intend to do so, wait four days longer, because my brother is going to give away blankets within a few days," and he continued: "Ma'malēleqala! my son is ready for you. He intends to give blankets to you. My brother-in-law KuLE'm is also ready for you, and Aā'listālitsa intends to give blankets to you." Then the Nā'q'oaqtôq, who intended to leave, arose and said: "I wish there were two men like you in Tsā'xîs (Fort Rupert). You are the first who treated me well; you who asked me to stay here."

November 20.—In the afternoon the Koskimo sent their messengers to invite to a feast. About 6 p. m. the people had assembled in their dancing house. First a Nā'q'oaqtôq distributed blankets among the people, and then one of their number arose, holding a copper in his hands. He spoke about its value, and said that he was going to buy it. Suddenly whistles and noise were heard outside, and the Koskimo hā'mats'a, who had disappeared the preceding night, entered, accompanied by his attendants. He danced around the fire once and disappeared again. Then the speaker of the Koskimo asked the Kwakiutl and the Nā'q'oaqtôq to sing. The Kwakiutl sang their two songs. The Nā'q'oaqtôq followed, but when in their first song they got out of time Yā'qoîs, the principal hāmats'a of the Kwakiutl, got excited. He jumped up, crying "hāp, hāp, hāp." His nine attendants rushed up to him, and while he was trembling violently they moved once to the right, once to the left behind the fire, then around the fire, and when they reached the door, they went out. During all this time whistles were heard proceeding from the circle of the attendants. While the Koskimo chief was continuing his speech the whistles and the howling of the hā'mats'a was heard on the street. Soon he returned, dressed only with a dancing apron, two rings of cedar bark worn crosswise over his shoulders, and a heavy ring of red cedar bark worn on his head. The first circuit he danced in a squatting posture. When opposite the door, he was for a short time carried by his attendants. In the rear of the house he turned once. The second circuit he danced standing, and the songs which were sung during this time were in a five-part measure. His feet were put down with the beats of the batons. The knees were lifted high up for each step, while the trunk moved downward at the same time. After he had gone around the fire twice, his father dressed him with a fine Chilcat blanket and an apron and leggins of the same make, with which he made two more circuits around the fire. Then he disappeared, utterly

[1] That means he wants to make his ornaments of red cedar bark more valuable.

exhausted, in one of the small bedrooms. During the dance he had apparently become quieter and quieter as time went on. Then Yā′qoîs's father arose and distributed a few blankets which had been fetched during the dance of the hā′mats'a. They were given as an earnest of the blankets with which he promised to pay for the ecstasy of his son.

Now at last the Koskimo began to prepare the feast. While they were engaged in this work, one of them shouted, all of a sudden: "Listen! What is going on outside?" Everyone was quiet, and suddenly the roof of the house shook violently. At the same time a boy was seen in the entrance of the house being wafted up and down. He hung perfectly limp while he was flying to and fro. Then the people pressed up to him and placed themselves so that the boy was in the dark. Suddenly he had disappeared. After a short time his bloody clothing and his head ring of red cedar bark fell down through the roof, and a short time after the bloody clothing of a girl also fell down. Then the speaker of the Koskimo said: "Three of our youths have been taken away by the spirits. Now our winter ceremonial shall begin." Great excitement prevailed, as this was quite unexpected to the other tribes. Then food was distributed, during which time speeches of welcome and of thanks were made. This was the end of the festival.

November 21.—Early in the morning the old hā′mats'a of the Koskimo, with three attendants, was seen on the beach pursuing a number of women. It appears that they had taken some of the food that was intended for him, which had excited his wrath. He ran after them, trying to bite them, and they escaped into the water, which the hā′mats'a is supposed to dread. There he kept them for a long time; whenever they made an attempt to escape, he tried to bite them and drove them back.

In the evening the father of Yā′qoîs gave the promised feast, in which he was going to pay for the ecstasy of his son. The blankets which he was about to distribute actually belonged to his mother. When the people were assembled in the dancing house of the Kwakiutl, she came in first, crying "hū, hū, hū," which indicates the weight of the blankets which she was going to distribute. She was followed by the father of Yā′qoîs, who entered singing his secret song.[1] He was followed by his son Yā′qoîs, the hā′mats'a, and by his sister La′stosalas, who is the k·î′nqalaʟala of the former. Then the members of his clan followed, carrying the blankets which he was going to distribute.

The speaker of the clan Sī′sînʟaē arose and said: "Look at me, friends, look at me well. This is my way of acting for my children." Then he turned to the Kwakiutl and said: "Yes, my friends, here I am again. I can not let you rest, for we must try to pacify our great friend.[2] Now arise! and take the handles of your batons," and turning to the Nā′q'oaqtôq and Koskimo, he asked them to help pacify the

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[1] Hē′lig·a yē′laqula.

[2] Meaning the hā′mats'a Yā′qoîs, who became excited the preceding day.

hā′mats'a. He said: "We have tried to tame him, but we can not do it. I am too insignificant as compared to him." "True, true," said all the people. Then they began to sing:

I have been all around the world eating with BaxbakuālanuXsī wa
I give nobody time to escape me, going around in the house with BaxbakuālanuX-
sī′waē.
You BaxbakuālanuXsī′waē, center of the earth, you were crying hāp for me;
You BaxbakuālanuXsī′waē, post of the world, you were crying hāp for me.[1]

Yā′qoîs and his k·î′nqalaLala danced, accompanying the song. First two songs were sung for the hā′mats'a, then two for the k·î′nqalaLala, one of which was as follows:

I keep down your wrath, Great, real Cannibal!
I keep down your whistles, Great, real Cannibal!
I keep down your voraciousness, Great, real Cannibal!
You are always looking for food, Great, real Cannibal!
You are always looking for heads, Great, real Cannibal!
You are always devouring property, Great, real Cannibal![2]

Then the speaker of the Koskimo arose and said: "Ya, Koskimo! Ya, Kwakiutl, Ya, Nā′q'oaqtôq. This here is my hā′mats'a.[3] I sold a copper for 1,000 blankets and he swallowed it.[4] I sold a copper for 1,200 blankets and he swallowed it. At another time I bought a copper for 1,200 blankets and threw it into the fire for the sake of his name. Now look out! I may do the same again this year. I want to make him as heavy as I can on my part. His father is doing the same for him." Then Yā′qoîs's father arose and the people shouted: "Speak, Chief; speak yourself; not through a speaker."[5] Then he said: "Friends, look at me; look at me well, because I want to tell you who I am! This is my way of doing. Five years ago you heard much about what I was doing. Then I gave my hā′mats'a first to Yā′qoîs. Ten times I gave blankets to the Koskimo. I want you to come to my house ten times this year, so that I may reach to the beams of my house. This is not my way of doing. Chief NEqā′penk·'Em, my father,[6] and Â′watē taught me this way and I followed them. My name is Ʇā′qoag·ila on account of the copper which I had from my grandfather. My name is Qō′moqoē on account of the ermine and abalone shells which I have from my grandfather. Do you want to know how I obtained my hā′mats'a? I opened my box and took out my dances, which I received from my brother-in-law, Q'ulî′s.[7] Therefore I am not ashamed of my hā′mats'a. Now I ask you one thing—do not call me Guē′telabidō.[8] It

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[1] Appendix, page 688.
[2] Appendix, page 693.
[3] He had given his hā′mats'a to Yā′qoîs at a former time.
[4] That means he gave it away.
[5] Wai, yā′q'ēg·aLax, g·ī′qamē, xā′mastala.
[6] He merely called him father.
[7] Or Nu′xnēmîs.
[8] Son of northern tribe, because his mother belonged to one of the northern tribes of the coast.

is well when I live like one of you, and it is well if I act like one of the northern tribe, because my mother was of high blood among her tribe. I do not give this festival that you may call me a chief. I give it in honor of these two who are dancing here, that the words of their enemies may not harm them. For this purpose I build an armor of wealth around them." Then his speaker continued: "You have finished. I am proud of you. Yours is the right way of speaking. There is nothing wrong in what you said." Then he turned to the Nā'q'oaqtôq, addressing their chief, K·ak·xâ'lasō: "Did you hear what my chief said? He did not speak against you; he did not speak against the Koskimo, and he did not speak against us. He shall be the speaker of the clan Sē'nLEm.[1] Do not speak behind our backs, calling us sons of northern tribes.[2] Our hā'mats'a is making us tired. Now take care! Look after your batons and speak carefully, and see that food is given in the proper way to our great friend. He has many fathers. If one of them has not enough property at hand, another one is ready to pay for his ecstasies. Hō'LElitē! Come and do what you like with these blankets here. They fell from the red cedar bark of Yā'qoîs."

Hō'LElitē arose and with him Amā'x·idayu. He praised Nō'Lq'auLEla, the father of Yā'qoîs, and said: "O Nā'q'oaqtôq. This is the first time that such a thing is done. His property runs from him in streams, and if one of his rivals should stand in the way he would be drowned by it."

Then he began to distribute the blankets, beginning with the mā'maq'a of the Nā'q'oaqtôq. Sometimes he did not know the proper order and rank of the different names. Then he inquired of the people, and they called to him, trying to help him. Some even threw stones at him in order to attract his attention. After the first pile of blankets had been distributed among the Nā'q'oaqtôq, he took up the second pile and distributed it among the Koskimo, beginning with their hā'mats'a. After he had distributed all, he said once more: "Be careful; the supernatural power never leaves our hā'mats'a; if you should make a mistake, he will become excited again." After his speech, the Nā'q'oaqtōq and Koskimo sang a song on account of the distribution of blankets, and one of the Koskimo said: "I begin to be afraid of the manner in which we are being treated here. The property which is being distributed here reaches up to my throat. I will not blame Nō'Lq'auLEla. My grandson is a hā'mats'a, and neither he has received a blanket nor have I received one." It so happened that his name had been forgotten in the distribution. Then Nō'Lq'auLEla took the button blanket which his mother was wearing and gave it to the speaker, who thanked him for it. Next a Nā'q'oaqtôq arose and said: "No clan has ever been known to do what you have done to-day, and I am afraid of you. Kwakiutl,

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[1] Or Sī'sînLaē.

[2] His father was a Hē'iltsuq.

you had a chief before this time, but now you have no chief."[1] Upon this all the Kwakiutl said: "True, true; we can not deny it."[2]

After these speeches were finished, food, which consisted of crab apples mixed with grease, was distributed among the guests.[3] When the people had almost finished eating, one of the Nā′q'oaqtôq gave a button blanket to his son-in-law as a promise of a great number of blankets which he was to give him at a later time. Then the recipient thanked his father-in-law. He took his staff, which he held horizontally on his shoulder, and which he carried as though he was loaded down with the gifts of his father-in-law. Slowly he went around the fire singing his secret song—a t'ō′X'uît song, as he was a member of that society. He turned when he came to the front of the house and when he reached the rear of the house. While he was still singing, all the Nā′q'oaqtôq singers assembled near the door. They held a plank to beat time on and began to sing. The man danced while they sang. After the second song, he put on the button blanket and danced, accompanied by the third song. During the fourth song he took up some burning coals and laid them before one of the men. This was to indicate that he had power over the fire. Then he took another piece of burning coal between his hands, rubbed it, and, swinging his closed hands forward and backward, he all of a sudden threw them forward, and as they parted the coals had disappeared. He had transformed the coal into a supernatural object which was to fly around the whole world to see if there was a chief greater than his father-in-law. In four days he said it should return and bring him answer. Then he announced that he would keep the blanket which he had received, and that he would not give it away, and the people replied: "Do as you say."

In the evening the Nā′q'oaqtôq held their kuē′xalakᵘ. When all the people had assembled, the speaker thanked them that they had come, and turning to his own tribe, he said: "Keep your batons in readiness!" As soon as he had said so, the door opened and two men came in wearing large blankets and imitating the motions of cormorants. They entered by twos and threes and gathered in the rear of the house, standing in a row. When all had come in, the speaker asked the first of the birds: "What is in your stomach?" He replied: "Kwakiutl." Then he asked the next one: "What is in your stomach?" He replied: "Four tribes," meaning the four tribes of the Kwakiutl. Turning to the third one, he asked: "What is in your stomach?" He replied: "The Kwakiutl, the Koskimo, and all other tribes." When he asked the next one, he acted as though he was vomiting. This means that he was vomiting the property that was to be distributed at night. The fifth one said to the speaker that he had gone from tribe to tribe through

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[1] Meaning that Nō′Lq'aᴜLᴇla, by his numerous distributions of blankets, had become greater than all the other chiefs.

[2] K·'ēsnoX hē′Xoa.

[3] The crab apples are picked while they are unripe, boiled, and kept in water.

the whole world swallowing the tribes.[1] After the speaker had asked every one in this manner, he thanked the cormorants for coming, and said: "I am glad that you are not light cormorants, but that you are heavy with property."

Another signal was given to the singers to beat time, and in came the killer whales. They also entered by twos and threes. They had fins made of wood tied to their backs, and came in blowing. They moved in a bent position, so that the fins stood upright. Blowing, they went around the fire, where they remained standing next to the cormorants. Now the speaker said: "Do you know why we open our ceremonial with the entrance of the cormorants and of the killer whales? In olden times, when Kuēkuaxā'oē traveled all over the world in his canoe Dā'daLa, he came to Goā'LgoaL'ā'lalîs, where the village of the Nā'q'oaqtôq is standing. There the Nā'q'oaqtôq and the killer whales were living at that time. Kuēkuaxā'oē left them and went to Ya'xoēstEm. After he had left, difficulties arose between the Nā'q'oaqtôq and the killer whales. When Kuēkuaxā'oē heard of this, he transformed part of the whales into birds, others into sand. For this reason the sand of the beach Goā'LgoaL'ā'lalîs is sounding when it is stepped upon."

After he had finished his speech, the women came in, dressed as birds. They danced around the fire and stopped next to the cormorants and killer whales. Then the speaker continued: "Do you know what this means? The birds were living at Ya'xoēstEm when Kuēkuaxā'oē arrived there. They were living in a cave. Kuēkuaxā'oē painted them different colors. The crows and the cormorants wanted to be made prettier than all the others, and waited until the last, but then they found that Kuēkuaxā'oē had used all his paint and had only some charcoal left, with which he painted them. Therefore they are black. After the birds had been painted, they came dancing out of the cave. At that time Kuēkuaxā'oē's canoe was burned. If you do not believe what I said, Koskimo, come and visit me and I will show you the place." After this speech, the Nā'q'oaqtôq distributed their blankets among the Kwakiutl and Koskimo.

After this was done, a messenger entered the house and said: "Some strangers are on the beach." The speaker of the Na'q'oaqtôq sent a man out, who took a torch and went down to the beach. Soon he returned and informed the speaker that some white men had landed and asked to be permitted to enter. The speaker sent for them, and the messengers came back leading a young Indian girl, who was dressed up in European costume, with a gaudy hat, a velvet skirt, and a silk blouse. Then they asked Nō'Lq'auLEla what he thought of her; if he thought she was wealthy. They asked him to send her back if she should be poor. He looked at her and said: "I can easily distinguish rich and poor and I see she is wealthy. Let her stay here." Then the speaker

[1] That means giving away blankets. When blankets are given to a tribe, it is called swallowing the tribe.

looked at her and said: "Oh, that is Mrs. Nū'lē." They led her to the rear of the house and asked her if she carried anything in her pocket. She produced a roll of silver quarter dollars, which the speaker took and distributed among the people. By this time it was near midnight.

Now the speaker said: "Let us take up the object of our convention." The festival was to be the initiation of a new q'ō'minâqa. About a fortnight before the festival the host's daughter, who was a q'ō'minâqa, had died, and he wanted to let his niece take her place. The festival was to be her initiation. She had been hidden in a secret room in the rear of the house, and when the singers began the songs of the dead girl she appeared wearing a blanket, dancing apron, a round neck ring, and a high head ring which was covered all over with down. She danced very slowly around the fire, accompanied by two attendants. Her hands trembled. They were held horizontally forward, lightly bent, her elbows resting on her sides. When she appeared, three women began to dance in the rear of the house in order to appease her. After four circuits she disappeared in her room, followed by her two attendants and the three dancers. When the second song was struck up, she reappeared and danced in the same manner as before. At the end of the song she went back to her room. During the third and fourth songs she grew quiet and danced like other women. When she appeared for the fourth time, she wore a huge round head ring. She was accompanied by an old woman, the aunt of the deceased girl, who wore no ornaments, and whose disheveled hair hung loosely over her face. This indicated that she was in deep mourning.

Soon after the end of the ceremony the song of a man was heard in front of the house. He approached slowly. Now the door opened and a naked person, wearing only an apron, and a head ring of red cedar bark, arm rings, and anklets of the same material, appeared. He stayed in the doorway for a long time, singing his secret song. Then he came forward, looking upward, his hands laid flat to the back side of his thighs. With short quick steps he ran around the fire. The audience became restless, because they feared him, the mā'maq'a, the thrower of sickness. When he entered, all the hā'mats'a had to leave the house. As soon as he began his circuit, a man holding a rattle ran up to him and followed all his movements. As soon as the mā'maq'a came to the rear of the house he gave a high jump. The drummer beat the drum rapidly and all of a sudden the mā'maq'a had caught his magical stick, which he held between his palms, drawing it out long and shortening it again. Suddenly he threw it into himself. The staff had disappeared and he fell backward in frightful contortions. Blood came pouring out of his mouth and out of his chest. After some time, he pulled the stick out of his mouth, recovered, and continued his dance. He tried to catch the stick again, looking upward and holding his hands close to his thighs. As soon as he had caught it all the people arose, and when he threw it, they stooped down, hiding in their blankets and crying, "wā." The first time he threw his stick it did not

hit anyone, but when he threw the second time two young Nā′q'oaqtôq rushed forward, blood pouring out of their mouths. After some contortions they lay there dead. The man who had accompanied the mā′maq'a's dance with his rattle was acting as though the stick had entered his throat and was suffocating him. As soon as the mā′maq'a had thrown the second time, he disappeared in the secret room in the rear of the house. Soon he reappeared, singing over the dead, who were carried into the secret room. Shamans were called, who sang over them and cried "hoîp," while the mā′maq'a danced a third and a fourth time, catching and throwing his stick, without, however, hitting anyone. This was the end of the ceremony.

November 22.—In the morning the Koskimo held a secret meeting, at which it was decided that Q'ē′q'anqoala was to show the dance Bā′baqoayūL (soul catcher). In this dance, which will be found described on page 575, the dancer pretends to capture the soul of one of the audience; but a certain amount of property is made to symbolize the soul. When therefore a dancer catches a soul, it means that he takes away from the owner a certain amount of property, which is to be distributed among the guests. Therefore the speaker asked at this meeting: "Q'ē′q'anqoala is going to show his dance. I want to know if anyone wants him to catch his soul." Whoever intended to distribute blankets offered his soul, saying: "Q'ē′q'anqoala, catch my soul, for I want to give away blankets to our rivals." The speaker thanked them for their offer. The soul is represented in the dance by a small ball of eagle down, which is attached to a string. As many balls are attached to the string at equal distances as there are men who offered their souls to be captured.

In the afternoon the Kwakiutl held a meeting at the assembly place in the woods, in which they laid out the plan for the kuē′xalak^{u}, which was to take place on the same evening. The Koskimo intended to have a festival on the same day, but finally gave it up on account of the one to be held by the Kwakiutl. The people assembled in the evening. The Kwakiutl sat in the rear of the house—the Koskimo on the right hand side on entering, the Nā′q'oaqtôq on the left hand side on entering. The last to enter were the members of the seal society, who took their seats in the last row in the rear of the house. The singers sat in front of them, while the old chiefs occupied the front row. When all had assembled, the speaker of the Kwakiutl arose and said: "Welcome, friends, on both sides of the house. We are all in our dancing house." And turning to the members of the seal society: "Do not go too soon, great friends." Now turning to the Kwakiutl, he said: "Now be ready with your batons."[1] As soon as he had finished his

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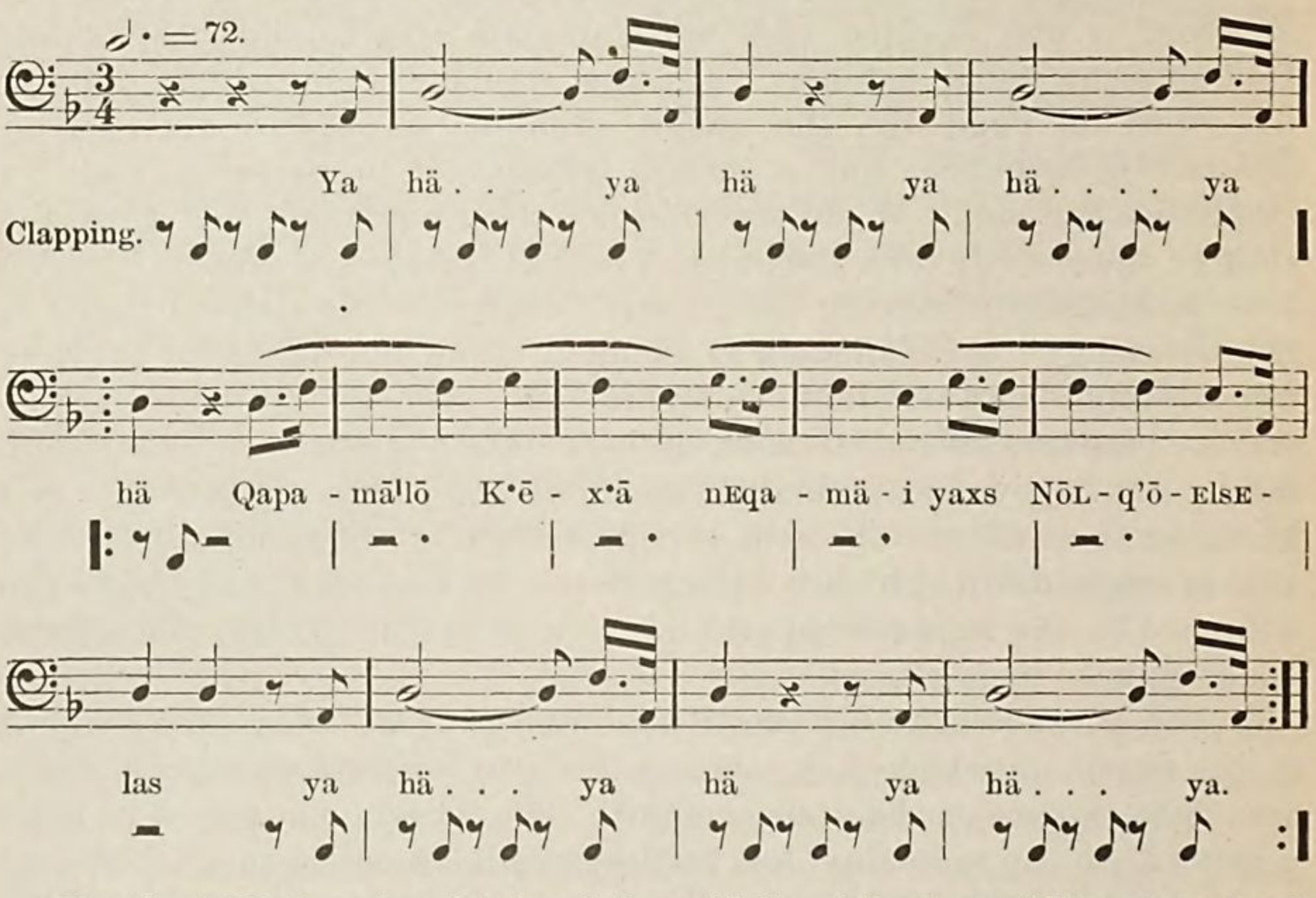
[1] Wä! qē′lag·a wā′waxsōtewalīL nēnEmō′k^{u}. G·ā′xmEns wē′ltsō lā′xEns
Oh! come on both sides in the house, friends. We all inside in our

ts'äq'atsēx. K·'ē′sLEs pak·'ā′laLōL nēnEmōktsē′k·as. Wä ya′LawiLōL
dancing house. Not you you hasten to go, great friends. Oh! take care in the house

nōs nēnEmō′k^{u} qa s daxLā′liLalag·aōs saxs t'a′miayüqōs.
my friends and you take at their ends your batons.

speech, the two messengers who stood in the doorway said: "K·ēx· and his sisters are coming."[1] Then the door opened, and the members of the killer whale society entered, surrounding the dancer, whose name was K·ēx·. He represents the Mink, and performs the dance which, according to the legend, Mink danced after having killed the son of the wolves. He had a red circular spot surrounded by a black ring painted on each cheek. He danced holding his palms downward and raising them alternately to his eyes, as though he was hiding his face behind his blanket. Another man, whose name was also K·ēx·, who was sitting in the rear of the house, began dancing when the singers commenced K·ēx·'s song:



That is, "Mink put on his head the middle of the face of NōLq'ōlsElas."

With the word "Qapamā'lō" of the song the dancer put his palms vertically to his nose, indicating the long nose of the fool dancers. They inserted in the song first the name of the fool dancer NōLq'ōlsElas, who, as soon as his name was mentioned, tried to strike the dancer and to stop his song. After his name they inserted those of Nō'L'it and of Wā'xsqEmlîs.

Then QE'lqēx·âla, speaker of the G·ē'xsEm, arose and said: "This is done in rivalry with what the Nā'q'oaqtôq did last night. They showed us their legends; these are our legends. I do not need to tell them to you; you all know how K·ēx·, the Mink, killed the son of the wolves."

Now the door opened, and four men dressed as policemen entered. They were KuLE'm, MEsx·ā'q, xE'lpatōsEla, and G·ō'koya.

The last of these acted the judge and carried a book. He sent the

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[1] G·ā'xLig·a K·ēx·ik· Lō'gwas wīs'waqoak·.
He comes Mink with his sisters.

policemen around asking if everybody was present, and KuLE′m asked, "Are all here?" The people replied, "Yes." Then the two other policemen went around, looked at everybody, and stated that one person was missing. They went out, and soon returned leading the old woman Gudō′yō, whose hands were fastened with handcuffs. Then they pretended to hold court over her on account of her absence. The judge pretended to read the law on the case, and fined her $70. She replied that she was poor; that she was able to pay in blankets, but had no ready money. KuLE′m, who acted the interpreter, pretended to translate what she said into English, and the payment of 70 blankets was accepted. Then the friends of Gudō′yō turned against the judge and said: "That is always your way, policemen. As soon as you see anyone who has money, you arrest him and fine him." She was unchained, and the policemen went back to the door.[1]

They called K·ēx· and his friends, the killer whales, and told them to fetch the 70 blankets. The cousin of the old woman, who was the speaker of the Maa′mtag·ila, told them where to go, and soon they returned. Gudō′yō's sister, LĒ′mElxa′lag·ilîs, followed them, dancing. All the people were singing a ha′mshamtsEs song for her. The blankets were distributed in her name. The mā′maq'a of the Nā′q'oaqtôq received his share first; then the other members of his tribe, and afterwards the Koskimo, beginning with the hā′mats'a. While this was going on, button blankets and bracelets tied to sticks were being carried into the house. A G·ē′xsEm, whose daughter had married LĒ′LĒlälakᵘ, a G·ī′g·îlqam of the Kuē′xa, was going to repay the purchase money of his daughter. This ceremony is called "the brief qautē′x·a." The speaker of the G·ē′xsEm, QE′lqēx·ala, arose and shouted: "Get ready, LĒ′LĒlälakᵘ,"[2] and called all the chiefs of the clan G·i′g·îlqam. LĒ′LĒlälakᵘ was sitting at the left-hand side of the door. He arose and said: "Did I hear you call my name?" "Yes," replied the speaker, "your father in-law is going to repay you." "I wish it were true what you said,"[3] remarked LĒ′LĒlälakᵘ.

Then the speaker counted 39 button blankets and gave them to him, saying that the fortieth was not quite finished yet; and he added: "Here are 120 blankets; if your button blankets should not be enough for all the guests, you may use these." After he had spoken, K·ā′qoLē, a speaker of the G·ī′g·îlqam, arose, holding the speaker's staff in his hands, and said: "I will go and take the blankets." With quick steps he ran around the fire, turning in the rear and in the front of the house. That meant that he was treading on all the tribes, because the Kwakiutl rank highest of all. Then he struck the pile of blankets with his

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[1] This performance was first introduced in 1865, and has been kept up since that time.

[2] Wē′g·a ʒoā′līLx LĒ′LĒlälakᵘ.
Go on, stand in the house, LĒ′LĒlälakᵘ.

[3] Wē′xEnL â′lanēs Las nē′k·a.
I wish it was true what he said.

staff. That meant he broke the canoe in which the blankets were stored so that they fell into the sea, the sea meaning the other tribes. Now he turned angrily to the Nā′q'oaqtôq, and said: "I am Lē′Lēlälak^{a}, who promised to give blankets to the Nā′q'oaqtôq."[1] After he had finished, Qe′lqēx·āla spoke again and gave Lē′Lēlälak^{u} the name which was promised to him at the time of his marriage by his father-in-law. He said: "Your name shall be G·a′lqEmalîs;[2] your name shall be QEmō′ta'yalîs[2] (howling over all the tribes), and your name shall be L'ēmElxElag·ilîs[3] and SEbE′lxalag·ilîs."

Then NE′msqEmūt, an old chief of the G·ī′g·îlqam, spoke: "Now you will be Walas'axa′ak^{u}."[4] Immediately x·ī′x·ēqala, chief of the G·ī′g·îlqam, interrupted him: "I am the only one who has the Walas'axa′ak^{u}. Do you want to know where I obtained it? Walas NEmogwîs and Ō'maxt'ā′laLē lived in K·'ā′qa. There he first came down from heaven, there he had his dancing house, and since that time it is called 'K·ā′qa,' or built on a rock. Come! Wā′xsqEmîs, that we may express our joy." Wā′xsqEmîs is a fool dancer, and as soon as he was called he became excited, and ran around the fire in the fashion of the fool dancers, crying "hi, hi, hi." Then the people sang his song. Now x·ī′x·ēqala continued, turning to the other tribes: "I will tell you how strong my clan is: Here is the copper Mā′xts'ōlEmtsēwuL lying dead in the water off our beach. Here is the copper Ya′xyaxaqau′loma lying dead in the water off our beach. Here is the copper Qoayî′mk·in lying dead in the water off our beach. Here is the copper Qa'wī′g·a lying dead in the water off our beach. Here is the copper NE′nqamala lying dead in the water off our beach."[5]

When the name of the copper Qa'wī′g·a (meaning raven) was called,

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[1]Nine years ago Lē′Lēlälak^{u} had promised blankets to the Nā′q'oaqtôq; but as he had not fulfilled his promise so far, he was much ridiculed. Whenever a festival was held, they said they heard him crying in the woods because he was not able to gather a sufficient number of blankets.

[2]A Walas'axa′ name.

[3]A ha′mshamtsEs name.

[4]La'ams Walas'axa′ak^{u} Lō
Now you Walas'axak^{u} you.

[5]G·a′am Lā′qoak· Mā′xts'ōlEmtsēwuL yâ′xstālis la′xoa L'Emā′îs. G·amē′s
This is the copper Maxt'sōlEmtsēwuL it is dead in the water. on this beach. This is

Ya′xyaxaqau′lomak·a yâ′xstālis la′xoa L'Emā′îs, etc.
Ya′xyaxaqau′loma it is dead in the water on this beach.

The expression, "lying dead in the water off our beach," means that the clan had broken it.

The first of these coppers is valued at 4,000 blankets, the next at 3,500 blankets. It is counted twice, because it was broken twice by the clan. The Qoayî′mk·in copper is valued at 1,500 blankets.

everybody expected that the hā′mats'a would get excited, and looked at him anxiously, but everything remained quiet. X·ī′x·ēqala continued: "That is the strength of my clan. None among all the other Kwakiutl clans ever broke as many expensive coppers as we did." With every copper that he named he put his staff down violently, bending his knees at the same time. Then he turned to the G·ē′xsEm and said: "I thank you for the button blankets and for the 2,000 bracelets," and promised at once to distribute the blankets among the Nā′q'oaqtôq.

After he had spoken, Lē′Lēlälak^{u} asked his brother-in-law, "What became of the 40 blankets which I gave you at the time of my marriage to your sister? If you do not want to pay them, say so; but if you do intend to pay them, let me know. Do as you have a mind to; I do not care." Then his brother-in-law replied that he was going to pay in course of time. Lē′Lēlälak^{u} then promised to give the 40 blankets to the Koskimo.

Now Hō′LElitē arose and said: "You have finished. Now let us take up the object of our convention." The blankets were put aside. As was stated before, the festival was to be a kuē′xalak^{u}—that means the initiation into one of the lower ranks of the secret societies. The person to be initiated was the son of Sē′g·ag′ila, who had arranged this feast. He gave his membership in the fool dancer society to his young son. The people began to sing a fool dancer's song. Then suddenly a fool dancer rushed out of the right hand rear corner of the house carrying his young son in his arms and crying, "wiē′, wiē′." At the same time he cleaned his nose and put the mucus on the boy's face. This is done because it is supposed that the power of the fool dancer is seated in the mucus. After he had run around the fire once he disappeared again behind the curtain which was drawn in the rear of the house. Hō′LElitē arose again and said: "This is NuLt'aqā′lag·ilîs," thus naming the place which the boy was to occupy. The people sang again, and a woman wearing the headdress of the Nā′naqaualiL came out. Another woman danced backward in front of her. A man carrying a rattle accompanied her. This dance was not an initiation, but only a representation of the dance which X·ī′x·ēqala had obtained from his wife by marriage. After this dance was finished, a young boy was to perform another Nā′naqaualiL dance. He came out and danced once around the fire, accompanied by one man carrying a rattle and three others who watched him. He wore a head ornament with four horns. After this dance he disappeared behind the curtain, and when the second song commenced, a large mask representing the sunrise Na′x-naik·êmL appeared in the rear of the house, coming from behind the curtain. It was a double mask, which in the course of the dance was to open. When the wearer of the mask opened it, one side of the cover broke. Although the attendants rushed up to the mask immediately, trying to cover it, the hā′mats'a had seen what had happened

and became excited at once, crying "hāp, hāp, hāp." The fool dancers and the bears joined him. The hā'mats'a rushed down into the middle of the house, the fool dancers struck and stabbed the people and pelted them with stones, and the bears scratched them. The greatest excitement prevailed. After a very short time the members of the secret societies of the other tribes became excited too. The hā'mats'a of the Koskimo jumped up trembling and crying "hāp, hāp." The Nā'q'oaqtôq hā'mats'a followed, and so did the pa'xala, who jumped about the fire squatting and crying "mamamamamama," which is the cry of the ghosts. He took burning coals and firebrands and threw them among the people. The women ran screaming into the bedrooms. The Koskimo accompanied their hā'mats'a out of the house, and the Nā'q'oaqtôq were driven out by their hā'mats'a. While this was going on, some of the Kwakiutl were trying to rearrange the fire. According to the rules, the members of the seal society ought to have broken the right-hand side of the house first, the left-hand side next, and ought to have driven out the people in this manner, the hā'mats'a biting the people, the fool dancers striking, and the bear dancers scratching them. But it seems that there was some misunderstanding in this case, and the house was not broken, although the excitement which prevailed was very great. While the Kwakiutl were trying to rearrange the fire, T'ēt'ēsumx·tsana, uncle of the Nā'q'oaqtôq pa'xala, ran around the fire shouting "naualakwai'!"[1] drawing the word out as long as his breath would allow. As the people left the house, the noise subsided, although the members of the seal society continued to rave in the house.

After a while the Koskimo returned into the dancing house, four men going first, each carrying a staff held in a horizontal position, and each singing his own song.

They were Wīnā'lag·ilîs. They led a young girl, who wore a head ring. She was just initiated into a secret society.[2] Then two of the speakers spoke at the same time. So far as it was possible to make out what they said, they spoke about as follows: "This girl has been the game of Wīnā'lag·ilîs, who is hunting novices." They led her around the fire once and guided her behind the curtain. While she was going around the fire, the Nā'q'oaqtôq pa'xala pointed his staff at the Koskimo. This, it is said, meant that he would kill them if they did not bring a novice.

Now the Nā'q'oaqtôq entered, first a hā'mats'a and two t'ō'X'uît, who held each other by the hand. When they came, the pa'xala, who was all the time standing with bent knees, dropped down still lower. Next, two mā'maq'as entered carrying a dead child in their arms. T'ō'pēwa, speaker of the Nā'q'oaqtôq said: "Nā'q'oaqtôq and Kos-

[1] Spirit of the winter dance.

[2] People who are initiated for the first time are called wā'tanEm. After they have been wā'tanEm four times they become members of the higher societies, the lā'xsâ.

kimo, you have a hard task; you must kick against a high mountain.[1] Wīnā'lag·ilîs or Hai'aLilaqas has killed this boy, the son of XExuā'nElq'ala, the pa'xala. The supernatural power came and took him away. He is dead. We will try to resuscitate him."

As soon as he said so, the mā'maq'a tried to throw the body into the fire.[2] T'ē't'ēsumx·tsana and T'ō'pēwa pushed them back and asked for assistance. Now they put the body down on top of a box and T'ō'pēwa asked the highest pa'xala of the tribe to try to resuscitate the boy. Lō'Xoaxstaak^{u} came and sang his secret song. Then he spoke to the Kwakiutl: "Friends, if you have a mask for the winter ceremonial which you want to show, do not let a stranger use it; teach your own people to show it, that no mistake may occur. Only because a stranger showed your mask a mistake happened and brought about our great difficulty. I say so, T'ō'pēwa."[3] Then he went around the fire singing. After he had made one circuit, the women joined his song and a deep sounding whistle was heard, which represents the breath of the pa'xala. He sang four songs, and after every song the whistles were heard. Every time it sounded the Kwakiutl beat time and cried "hä, hä, hä, hä." Then the boy began to move again and pretended to come to life. This was the end of the festival.

When all was over, the hā'mats'a of the Koskimo appeared once more and ran around the fire, followed by his assistants. Then he disappeared again.

November 23.—Early in the morning the Koskimo dressed themselves to meet their novice. Two messengers went through the village and asked the people to clear the floors of the houses and to sweep them. They arranged themselves in two groups—first the wī'xsâ, then the lā'xsâ. One of the former carried a skin drum. The men walked first. They were followed by the women, among whom was the new wā'tanEm, who was initiated the preceding night. The men were singing while the women were dancing. The wā'tanEm danced, raising her hands alternately, her elbows close to her sides, the palms of the hands upward. She had four feathers on her head ring. She did not dance with the first song, but joined the dance during the second, third, and fourth songs. The lā'xsâ followed the wī'xsâ at a short distance. The men were singing, a woman beat a skin drum, and others, among them another wā'tanEm, were dancing. Thus they walked from one house to the other. A few hours after this the hā'mats'a was heard all of a

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[1]Meaning that they had to strive against the Kwakiutl.

[2]As all of this was quite unprepared, the ceremony was not carried out as it is in other cases. If the performance has been planned beforehand, the mā'maq'as would have provided themselves with a skeleton, which they would have carried in their arms instead of the child. They would have thrown the bones into the fire, and after the charred remains had been seen by the people they would have made them disappear in a ditch made for the occasion, and the boy would have risen at the place where the charred bones had been seen before.

[3]He spoke in behalf of the latter and therefore used his name.

sudden on the beach west of the village, but soon he disappeared again. Then the Koskimo walked behind the village, where the "breathing hole" of the hā′mats'a is supposed to be. During this time he is believed to be in the underworld. They went behind the village, thinking that he might come up from underground. About 11 a. m., a man who had gone into the woods west of the village to gather alder bark, was attacked by the hā′mats'a of the Koskimo. In order to save himself from the attack, he ran into the sea and walked home in the salt water, pursued by the hā′mats'a. His cries soon attracted the attention of the people. They ran up to the hā′mats'a and surrounded him. He was naked, except that he wore a head and neck ring of hemlock branches and a belt and apron of the same material.

After he had been caught, the Koskimo sat down, and the song maker taught them his new songs. After they had learned the songs, they arose. The men took a long plank and beat time on it, while one was carrying the skin drum. They sang the first two of the new songs. The women went ahead, dancing in honor of the hā′mats'a, who was dancing in a squatting position. Thus they approached the village slowly, going along the beach.

Finally they entered the dancing house, where the hā′mats'a danced, accompanied by the first and second songs. Then he disappeared in his bedroom with his attendants.

Now Lō′Xoaxstaakᵘ arose and said: "Now, friends, I will ask you to help me and dance to-night with the new hā′mats'a which was given to you, Tōqoamalîs, chief of the Koskimo, by the giver of the winter ceremonial. I follow his law. All the hā′mats'as shall dance with our new hā′mats'a. I do not know yet what his name is going to be. I ask you, Ts'ā′qoalag·ilîs; and you, Tā′nîsk·asō; and you, Qoā′ts'amya; and you, LēmElxa′lag·ilîs; and you, Nā′noqoîs; and you, WēqoamiLa′lag·ilîs. Now you all must go and wash in the water of BaxbakuālanuXsī′waē and put on the dress of the BaxbakuālanuXsī′waē. That is all."

Then Tō′qoamalîs arose and said: "O my children. I am glad to see that you are obeying the laws that were given to our ancestors. You know that if we make a mistake in this ceremonial, it means that our lives will be cut short. When I was a young man, I have seen my grandfather kill a man who broke the rules of the red cedar bark. Thus I tell you A′Labala, and you Lō′Xoaxstaakᵘ. That is all."

Most of the people now left the dancing house. All day whistles were heard proceeding from the room of the hā′mats'a. The people prepared for the dance that was to be celebrated that night.

The members of the seal society of the Kwakiutl had remained in their dancing house since the preceding night. They were not allowed to leave it until the approaching k·ik·î′lnala. The fool dancers and bears however, were sent out every now and then to get food. At other times they ran out of the house with their lances and struck and scratched the people or threw stones at them. Some-

times the hā′mats'a, accompanied by some of the fool dancers and bears, would leave the house and attack the people. In the afternoon all the members of the seal society appeared on the roof of the house. Every society howled its peculiar cries, the fool dancers throwing stones at the people. During all this time the people were forbidden to pass in front of the house. Whenever anyone approached the house, the members of the seal society frightened him away. While they were on the roof of the house, all standing at the front edge of the roof, a man approached. Immediately the hā′mats'a and bears jumped down and pursued him. The fool dancers climbed down the sides of the house, and all went in hot pursuit until the man escaped into one of the neighboring houses. Whistles of the different societies were heard in the house all day long.

About half past six in the evening, Lāgulā′g·aliL and Lō′Xuals blackened their faces, put on blankets and belts, head rings and neck rings of red cedar bark, and strewed eagle down on their heads. Then they left the dancing house and opened the door of the neighboring house. There they stood, and Lāgulā′g·aliL cried: "Now, quē′qutsa men and women, let us go into the house;" and Lō′Xuals added: "We will pacify our cannibal." Thus they went from house to house. When they had returned from the round, four young men went and called the people, saying: "Now we come to make you rise." While they were still going around, some of the Koskimo gathered in the dancing house, beat the boards, and cried "yū" twice, giving a short final rap with each cry. As soon as the Kwakiutl heard the beating, they all went to the dancing house. There the beating and the cries were repeated twice.

About 8 p. m. all had assembled in the dancing house. The men of the Koskimo tribe were sitting in the rear portion of the house. Then LoXuaxstaakᵘ, a Koskimo, arose and spoke: "Come, friends, that you may see the manner in which I perform the winter ceremonial. This was given to us by the creator of our ancestors. Your ways, Kwakiutl, differ greatly from ours. They were given to you in the beginning of the world. Take care and do not change your old customs, Kwakiutl!" Then he turned to his tribe and asked them to hold their batons in readiness. While he was speaking he held his staff in a horizontal position. Then Ho′LElitē, chief speaker of the Kwakiutl, replied: "Your speech is good, friend. It is true what you said. I am glad to see that you are adhering to the customs that were given to you;" and, turning to the Kwakiutl, he continued, "We must answer our friends."

Now the rest of the quē′qutsa of the Koskimo entered—first G·a′loīL, the chief speaker of the dancers. He held a speaker's staff in his hands and carried a number of blankets over his shoulder. He was singing his secret song while the others were singing outside the house. He sang as follows:

1. I tried to tame them by the power of my magic, friends.
2. I blew water upon them to tamethem, friends.

A second speaker followed, carrying his staff. His name is Mā′a. He is the highest in rank of all the quē′qutsa. When he entered, G·a′loīL stopped singing and Mā′a commenced his secret song. At the same time G·a′loīL addressed the people and said: "Now look at me and at my friend. Look at us, friends, at the other side of the house" (meaning the Kwakiutl). And, turning to his own tribe, he continued: "Now take care, friends!" To which A′Labala, another speaker, who stood next to LōXuaxstaak^{u}, replied: "Yes, friends, let us keep in readiness. If we should make a mistake, we shall not escape the power that will kill us." During these speeches Mā′a sung his secret song, as follows:

1. Ah, I have everything; I have all the dances of my enemy.
2. Ah, I have all the death bringers of my enemy.

Now a third man, a wolf dancer, entered. Two white feathers were attached to his head ring of red cedar bark and his head was strewn with white eagle down. His name was NaqwaLayē. As soon as he entered, Tō′qoamalîs and LāgulagˑālîL, the chiefs of the Koskimo, who had been sitting in the rear of the house, arose, and with them their speaker, Qoa′lxˑala.

NaqwaLayē's head ring belongs to the descendants of Ya′xstaL of the Naqô′mgˑi lisala. According to tradition, the Xōyā′lEs (see also p. 332) had killed all the GˑigˑēˑLEm, except LēōˑlExmut and his three sons, the eldest of whom was Ya′xstaL. In order to make his sons strong, LēōˑlExmut dragged them over the beach around the island of GˑigˑēˑLEm, so that the sharp shells cut their backs. Only Ya′xstaL survived this ordeal, and came to be of supernatural strength. Then they went to make war upon the Xōyā′lEs. When they had reached Ta′tsolîs, a wolf came to their camp while they were asleep, threw Ya′xstaL on his back, and carried him away. From time to time he put him down, in order to see if he was still alive. When he felt his breath, he took him up again and continued his course. Finally he reached the village of the wolves. He threw Ya′xstaL down in front of the chief's house and, having assumed human shape, he whistled. Then many people came out of the houses to see who had come. They mistook Ya′xstaL for a sea otter, carried him into the house, threw him down, and began to cut him up. When they had cut down his chest and were about to open his belly, he jumped up and asked: "Will you help me to take revenge upon the Xōyā′lEs?" The wolves promised to help him, and asked him: "What did you come for? Do you want to have this wedge? It will help you to build canoes in which you can reach your enemies." Ya′xstaL did not reply, but merely thought he did not want to have the wedge. WīLaqā′latit, chief of the wolves, knew his thoughts at once. He asked: "Do you want the harpoon? It will enable you to kill seals enough at a time to fill your canoe." Ya′xstaL thought that he did not want to have the harpoon, and WīLaqā′latit knew his thoughts. Then the wolves offered him the water of

life and the death bringer. He thought: "That is what I came for." WīLaqā'latit knew his thoughts and gave them to him. Then he ordered the wolves to devour Ya'xstaL. At once they tore him to pieces and devoured him. They vomited the flesh, and when WīLaqā'latit sprinkled it with the water of life, Ya'xstaL arose hale and well. He had become exceedingly strong. Then they carried him home. He was standing on the back of the largest of the wolves.

After he had come back, he and his father continued their journey. While they were traveling, Ya'xstaL tried his death bringer. He moved it in the direction of the woods. At once they began to burn. Now they met the Xōyā'les, who were coming up to them, many canoes full. LēŌ'lExmut said to Ya'xstaL: "Now use your death bringer, but do not kill them outright; burn them." Then Ya'xstaL pointed the death bringer at the Xōyā'lEs while his father was singing. They were stricken with terror and jumped into the water, their canoes caught fire, and they were all transformed into stones.

The two feathers on the head ring of the dancer represented the death bringer of Ya'xstaL.

Next two couples entered, each couple hand in hand. The first couple were ƓāLa (a man) and Pō'wig·ilîs (a woman); the second couple were G·ā'sa (a man) and G·ō'qoadē (a woman). G·ā'sa was carrying a copper. The faces of these four persons were painted red.[1]

When they had reached the rear of the house, G·ā'sa spoke as follows: "Oh, friends! turn your faces this way. Look at me! Treat me and my cedar bark ornaments in the right manner. In former times I and my people have suffered at your hands, Kwakiutl. We used to fight with bows and arrows, with spears and guns. We robbed each other's blood. But now we fight with this here" (pointing at the copper which he was holding in his hands), "and if we have no coppers, we fight with canoes or blankets. That is all."

To this the speaker Qoa'lx·ala replied: "True is your word, friend G·ā'sa. When I was young, I have seen streams of blood shed in war. But since that time the white man came and stopped up that stream of blood with wealth. Now we are fighting with our wealth. That is all." Then he said, turning to his tribe, "Now, my singers, take your batons and be ready to sing."

Then they all began to beat time and cried "hē." They continued with a song, for two women, Mē'xas and Tsa'uLala, came in dancing:

Ah, magician, ah, ah, ah, magician, magician, magician. (Repeated ad infinitum.)

When the dance ended, G·ā'sa spoke again: "You have seen our two friends dancing on account of this copper. Its name is 'Killer Whale.' It is the property of my tribe, of the Koskimo. Now I will sell it to

[1] Up to this year the Koskimo, Nā'q'oaqtôq, and La'Lasiqoala never used red paint during the winter ceremonial. The quē'qutsa of the Kwakiutl have been using red paint, and this has been imitated by the other tribes.

you, Kwakiutl. I promise to give its value to you Guē′tɛla, and to you Q'ō′mōyuē, and to you Walas Kwakiutl, and to you Q'ō′mk·ūtîs. This is 'Killer Whale.' I want to sell it at once." Thus speaking, he gave it to Q'ēq'anqoala and said: "Go on! Place this copper before our friends." He did so. Then a Kwakiutl chief, No′Lq'auLɛla, arose and spoke to Q'ē′q'anqoala: "Bring the copper to me." He did so, and Nō′Lq'auLɛla continued: "Oh, my tribe! my friends! Look at me. I, Nō′Lq'auLɛla, took the copper for the sake of your name, Kwakiutl, because your name is above those of all other tribes and I do not want to see it derided. Now, brother-in-law Nu′xnēmîs, look at me. I have nothing with which to pay for this copper to which I have taken a liking. Therefore I ask you and my wife La′msitasō to buy the copper for me. That is all, friends!"

To this speech Mā′a, the Koskimo, replied: "There is no chief like you, Nō′Lq'auLɛla. You are the first one to treat us well. You carry your tribe on your back by the strength of your wealth."

When he had finished, Tō′qoamalîs, chief of the Koskimo, took a pair of blankets and spoke: "True is your word, Mā′a! Nō′Lq'auLɛla is our chief, for he gave us more property than any other chief of the Kwakiutl. Go on, Nō′Lq'auLɛla! buy our copper," and, turning to his tribe, he concluded: "Thus I speak for our chief, Koskimo." Now he held up the pair of blankets and said: "Look at this, friend! This is our good will to our friends on the other side" (meaning the Kwakiutl). "I want you to do as our friend G·ō′qoadē did who brought the copper into our dancing house. Sell it for blankets and give them away! This pair of blankets served to keep our copper warm. I took it off in order to put it onto some of our friends on the other side. This is for Yā′qoîs, Sē′îx, and Hō′Lɛlitē. It is given by G·ō′qoadē, the daughter of Kō′kwiLala. That is all."

Then Mā′a and G·a′loīL went out, and immediately the quē′qutsa began to beat time and cried "yū!" all at the same time. When they had done so, the whistles of the hā′mats'a were heard on the roof of the house. Then Mā′a returned, carrying a staff to which an imitation of a scalp was attached. He was followed by G·a′loīL. Both remained standing at the door, one on each side, and Mā′a said: "Friends, did you hear that noise? If I am not mistaken, something dangerous is near us. Keep your batons in readiness."

While he was speaking the door opened and the hā′mats'a Ya′xya-k·alag·ilîs appeared, crying "hāp, hāp, hāp." His face was blackened. He wore a head ring and a neck ring of red cedar bark. His neck ring was thin and set at two places with long fringes, indicating that this was the first initiation of the new hā′mats'a. He wore no blanket. He was accompanied by two attendants, who carried rattles. One of them wore a large head ring of red and white cedar bark, the ring of the mā′maq'a of the hēlig·iliqala of the La′Lasiqoala tribe.[1]

[1] See "Indianische Sagen von der Nord-Pacifischen Küste Amerikas," Berlin, 1895, page 187.

As soon as he entered the Koskimo began to sing:

1. Your dance does not equal mine, for I am the giver of magic, hamē.
2. I have been in the secret room of BaxbakuālanuXsī'waē, the giver of magic, hamē.
3. In high ecstasy was BaxbakuālanuXsī'waē, the giver of magic, hamē, when I was near him and uttered his cannibal cry, BaxbakuālanuXsī'waē, the giver of magic, hamē.

The second song was as follows:

1. I am known here and all over the world, I the supernatural one.
2. I am renowned here and all over the world, I the supernatural one.
3. You are the great one who gives coppers, who gives property, the supernatural one.

While the people were singing, the hā'mats'a danced in the doorway in a squatting position, turned around, and danced toward the rear of the house. Two women danced for him, one to the right, one to the left of the door. When he had reached the left hand rear corner of the house, Mā'a and G·ā'loīL stepped forward and followed him, saying now and then: "Great is your magical power. Do not be too violent in your fury," and the attendants cried "hōîp, hōîp." Whenever the singers came to the end of a line, the hā'mats'a stopped dancing and cried "hāp." The attendants gathered around him while the sound of whistles was heard.

After these two songs had been sung, Mā'a spoke: "Friends, we can not pacify the great hā'mats'a with these two songs and by means of the dance of these two women. Now arise, women, and dance with him. If we should not succeed in pacifying him, we should always be troubled by him. We should not be able to eat in our houses on account of him. Therefore, friends, sing again." While he was speaking, the sound of the whistles continued to be heard. The hā'mats'a was crying "hāp." Then Ā'Labala stepped up to him and dressed him with a black blanket and an apron and strewed eagle down on his hair.

Now the singers commenced the third song:

1. You are looking for food, great magician, you are looking for men, mā hā.
2. You are trying to eat as much as you desire, great magician, you tear off their skins, mā hā.
3. You go close to the secret room, great magician, you have been inside the secret room, mā hā.

During this song the hā'mats'a was dancing in a standing position. His movements were becoming less violent and the sounds of the whistles were becoming fainter. The cries "hōîp" of his attendants, the singing of the men, and the dances of all the women were beginning to pacify him. At the end of the song the women took a rest. They had been dancing, their backs turned toward the fire, with the exception of two who were standing at the sides of the door and who stood turned toward the fire.

Now the speaker G·ā'sa joined Mā'a and G·ā'loīL, who were standing near the door. Then the singers began the fourth song:

1. The chief cannibal of the whole world cried hāp; mē, hamā.
2. Now eat, chief cannibal of the whole world, mē hamā.
3. Do not try to hide from me, mē hamā.

The hā′mats'a was dancing still more quietly, first to the right and then to the left in the rear of the house, then around the fire. In front of the fire he squatted down, crying "hāp." His attendants gathered around him and shook their rattles, crying "hōîp." Then, with the beginning of the next line of the song, he continued his dance, and after four circuits he disappeared behind the curtain which was stretched in the left-hand rear corner of the house.

Then Mā′a, who was still standing near the door with his two companions, spoke: "Friends on the other side of the house! Now our great friend is pacified." While he was speaking, Kō′kwiLala, the helper in the winter dance, swept the floor with hemlock twigs, in order to prepare it for the following dances.

Then Ā′Labala, who was standing in the right-hand rear corner of the house, spoke: "Take care, friends on the other side of the house. Watch my customs, for they were given to my tribe, the Koskimo, and to the L'ā′sq'ēnôx and G·ō′p'ēnôx, and to you Gua′ts'ēnôx, by the Maker of the world. Your customs, friends on the other side of the house, differ from ours. They were given to you. I am glad to see that you as well as we are observing our old laws. Now Tabala, Ha′nk·ala, Tsā′xîs, and LōXuals, go and fetch our chief's blankets."

The four men left the house, and soon they returned carrying the blankets. G·ā′sa took one pair and said: "Hō′LElitē and Nu′xnēmîs, look at these blankets. That is the power of our winter dance. The hā′mats'a who just finished dancing is Ya′xyak·a′lag·ilîs, and these blankets will be given away in honor of his name and of his dance." Then he gave the first blanket to Yā′qoîs, the chief hā′mats'a of the Kwakiutl, and then to the other men in order. When all were distributed, Hō′LElitē spoke: "Friends, did you hear what G·ā′sa said? Everything he said is true, except one remark, in which he is mistaken. You said that your customs in regard to dances and festivals differ from ours; remember, we are all of the same name. That is all. Thank you for this red cedar bark that you gave us (meaning the blanket). Now I have finished."

Then Qoā′qoaxst'ala walked around the fire, apparently without any purpose, but in fact as a signal for the dancers, who were standing outside the house, to enter. The door flung open, Mā′a, G·ā′loīL and G·ā′sa, who remained standing near the door, gave a signal to the singers, who began to beat time very rapidly. A song was heard outside the house, and now a dancer, K'uē′daqala by name, entered with quick, short steps, his hands stretched backward under his blanket, his face blackened. He was both mā′maq'a and ha′mshamtsEs. As soon as he had come to the rear of the house, the singers ceased beating the boards. Mā′a said: "Thank you, friend, for coming to this dance."

Then G·ā′loīL gave another signal, and a female dancer, T'ē′La by name, entered, her hands stretched forward. Again the singers stopped

beating the boards. G·ā′loīL gave another signal, and a second woman, G·a′lg·amqas by name, entered, and danced in the same manner. She stepped up to T'ē′La, and the singers stopped beating the planks.

Then G·ā′sa spoke: "Friends, look at these two women. They are the mothers of my tribe. They carry all the winter dances. Whenever these two appear, we must be on the alert, for they are always followed by other dancers." When he had finished, LoXoaxstaak^{u} told the people to be careful, because he had heard the voice of Q'ē′q'anqoala, the Bā′baqoayūL (soul catcher).[1]

As soon as he entered, all the dancers stooped down as though they were trying to hide, for fear that Bā′baqoayūL might take their souls. His aunt, Pō′sqaas, took a position to the left of the door, and while he was walking around the fire she danced the ha′mshamtsEs dance. When he came back to the place in front of the fire, all the people arose and he lifted his hands, the palms being held close together. This was repeated four times. When he stopped the fourth time in front of the fire, he opened his palms and the "soul" was seen between them. The speaker told the singers to stop beating the boards, and Mā′a went about among the people in order to find whose soul the dancer had caught. After a short while he turned to the people and said: "My friend Q'ē′q'anqoala has captured the soul of our chief LĀ′qōlag·ilîs." Then the latter stepped forward and asked the singers to sing the song of Q'ē′q'anqoala and of his aunt Pō′sqaas.

They sang as follows:

1. I go to obtain your cedar bark ornaments, hā, your cedar bark ornaments, hamē me, hamē, hamē, hamē hē hamā hē hē hamā.
2. Now your dance will shine throughout the world wherever a winter dance is held; Giver of light, hamē mē, hamā.

During this song the Bā′baqoayūL was dancing on one spot in the rear of the fire in a bent position. Pō′sqaas was dancing the ha′mshamtsEs dance to the left of the door, and G·ā′sa and G·ā′loīL, the greatest mā′maq'a among the Koskimo, danced around the fire, their elbows held close to their sides, forearms held forward, hands closed, and thumbs stretched upward.

At the end of the dance LĀ′qōlag·ilîs spoke to Q'ē′q'anqoala: "Come, my son! I thank you for bringing back my soul, for I am saved now." Then he called the two chief speakers, Ā′Labala and Lō′Xoaxstaak^{u}. They followed his summons, and he gave them a stick about 2 feet long. Lō′Xoaxstaak^{u} held it up and said, "Oh, friends on the other

[1] This is a t'ō′X'nît dance of the G·ō′p'ēnôx. The dancer is supposed to be able to catch the absent souls of people. He dances, his palms held close to the body, like the mā′maq'a. (See p. 560.) A string is fastened to his middle finger and a small ball of eagle down is fastened to the middle of the string. When he opens his hands, the ball is seen in the middle between them, the ends of the string being tied to the middle fingers. It represents the soul that the dancer has captured. The details of this dance are described in the text. (See also p. 561.)

side. I am glad that we have someone who can catch our souls when they fly away from us. Now I will pay you, Kwakiutl. Thus I speak for Lā′qōlag·ilîs. Here are blankets for you, Guē′tEla. Here are blankets for you, Q'ō′moyuē; blankets for you, Walas Kwakiutl; blankets for you, Q'ō′mk·ūtîs. This is a canoe worth 100 blankets, given by Q'ē′q'anqoala, the son of Lā′qōlag·ilîs.

To this La′mg·ala, a Walas Kwakiutl, replied: "Thank you for your good words, Ā′Labala. Did you say that you have someone who understands to catch the souls of men?" "Yes," shouted many of the Koskimo. He continued: "Thank you. We might need your help." Then, turning to the Kwakiutl: "Friends, I ask you to keep yourselves in readiness, for the Koskimo are like to a vast mountain of wealth, from which rocks are rolling down all the time. If we do not defend ourselves, we shall be buried by their property. Behold, friends! They are dancing and making merry day after day. But we are not doing so. Remember, this is our village and our battlefield. If we do not open our eyes and awake, we shall lose our high rank. Remember, Kwakiutl, we have never been vanquished by another tribe. That is all."

Now a loud clapping was heard outside the house. The walls were beaten with sticks, and Mā′a gave a signal to the singers to beat the boards. The door opened and a man entered, the chief guē′so, followed by four other members of the group.[1] They hopped into the house holding their feet close together. When they had reached the rear of the house, Mā′a, who was holding a gun in place of a speaker's staff, spoke: "Friends, why should you not come to join our dance?" and, turning to the Kwakiutl, he continued: "Friends on the other side, these are our friends the 'Pigs!' Formerly they were 'Sea Lions.' This is to inform you." Next, LōXoaxstaak^{u} said to the chief singer, Qoā′qoaxst'ala: "Look out! our friends are very merry and they wish to dance." The maa′myaēnôx[2] commenced a song, which was taken up by the singers:

1. What is on the enemy's blanket? Wiēē.
2. War is on the enemy's blanket. Wiēē.

The women arose and danced, raising their forearms and holding up their first fingers. This song and dance were repeated four times. At the end of the song the singers beat time very rapidly and then the hā′mats'a's cry "hāp" was heard in the secret room.

This song and dance were given by the wolves to Ya′xstaL, and are used by his descendants to excite the hā′mats'a and warriors who go out to battle.

When the singers commenced the song for the third time, G·ā′loīL, who

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[1] This is one of the quē′qutsa groups of the Koskimo. Their present name is guē′gusō (pigs) while formerly they were called L'ē′LēxEn (sea lions).

[2] Another of the quē′qutsa societies of the Koskimo, embracing the daughters of the chiefs—those who must not be maltreated.

represented Ya′xstaL himself, joined the dance of the women. He jumped about in a circle in the wildest fashion. Then the hā′mats'a's cries "hāp," and the quieting calls of his attendants, "hōîp," were heard.

After the song and dance had been repeated a fourth time, Xulē′qulEls, a G·ō′p'ēnôx, and his speaker, Hē′g·ilaxsē′k·a, arose. The latter took up some blankets and spoke: "Yes, friends on the other side! Kwakiutl! I have my ways of celebrating the winter ceremonial, and you have your own, different from mine. Thus it was given to you by the Giver of Dances. I should like to have your dances, but I am afraid to change my ways, for they were given to me in the beginning of the world. This song which we just sang was given by the wolves to Ya′xstaL at ƃā′yaīL when he received the death bringer with which he was to burn his enemies or to transform them into stone or ashes. We are of Ya′xstaL's blood. But instead of fighting our enemies with his death bringer, we fight with these blankets and other kinds of property." Then he distributed the blankets among the Kwakiutl.

Next, two young men whose faces were blackened stepped forward, and one of them said: "I am going to look for my friend." He went out and brought an old woman to the middle of the house, where she sat down. Qoā′qoaxst'ala said: "Take care, friends! this woman is going to dance. Prepare to sing her song." Then the singers beat the boards rapidly and cried "yū." The beating and the cry were repeated at a given signal. As soon as the second cry died away, another hā′mats'a was heard outside the house.

Ā′Labala, who had left the house a short while ago, reentered, stood in the doorway, and spoke: "Look at me, friends! Now take care! I have seen something outside the house that looks as though it was not going to have mercy upon anybody. Thus I tell you. Now beat the boards!" Then the singers began to beat time, the door opened, and the hā′mats'a entered crying "hāp, hāp, hāp." At once everybody commenced to sing his or her secret song. Ā′Labala went up to the hā′mats'a with short quick steps and then back again, saying: "Come friend, that this great tribe may see you." Then he turned around and said: "This is Ts'ā′qoalag·ilîs, our chief hā′mats'a. Take care, friends; he devours property, not flesh of men."

Now the hā′mats'a came down to the middle of the house. He wore a head ring of red cedar bark, to the back and front of which branches of balsam pine about six inches long were attached crosswise. His neck ring was worn over the left shoulder and under the right arm. It was made of red cedar bark wound with branches of balsam pine. The women began to dance for him. He danced, squatting, toward the rear of the house, and was joined by the old hā′mats'as, Tā′nîsk·asō, Qoā′ts'Emya, LēmElxa′lag·ilîs, Nā′noqoîs, and WēqoamiLa′lag·ilîs, who entered one by one, crying "hāp." Finally they reached the rear of the house, where they remained standing in a row, their backs turned

toward the fire. Then the door opened and the new hā'mats'a, who had been brought back in the morning, entered, crying "hāp, hāp, hāp." He wore a head ring made of balsam pine, to which a long plaited trail of the same material was attached. The trail reached down to the small of the back. Three white rings about one inch in diameter, made of cedar withs, the bark of which had been stripped off, were attached to the ring over his forehead and one on each side, all on the same level. Another ring of the same material was attached to the trail. He wore an apron made of balsam pine; his neck ring, arm rings, and anklets were made of the same material. He was held by one assistant.

As soon as he entered, the singers began to beat the boards, and continued until he had come down to the floor. Then they began to sing his first song:

1. He cried hāp for me, the only great being in our world.
2. BaxbakuālanuXsī'waē cried hāp for me, the great cannibal of our world.
3. BaxbakuālanuXsi'waē taught me to devour lives, the great cannibal of our world.

He danced to this song, and Ts'ā'qoalag·ilîs, the chief hā'mats'a, danced forward to meet him, cried "hāp!" and attacked the people.

After this song LōXuaxstaak^{u} arose in the rear of the house, holding a copper, and a woman named Āyaqa, brought a strip of calico about 40 yards long, which was unrolled and spread in a circle around the fire.

Then the singers began the second song:

1. I give you to eat, I give you to eat, good cannibal.
2. I pacify you with property, I pacify you with property, good cannibal.
3. I push down your wildness, I push down your wildness, good cannibal.
4. I give you lives to eat, I give you lives to eat, good cannibal.

The hā'mats'as were dancing between the calico and the fire in a squatting position. Their attendants tried to pacify them with cries of "hōîp," and women danced for them. Then A'Labala stepped forward and asked the singers to wait before beginning the third song. He called his speaker, Tō'qoamalîs, who took his position in the rear of the house, and addressed the people as follows:

"Yes, my children, I am the storage box of your thoughts, for I remember all the old tales, and in my young days I have seen things which you young people never heard of. It is good that there is one old man who can show you all these things. Now I will go to this hā'mats'a and take off the dress that BaxbakuālanuXsī'waē put on him." He stepped up to the hā'mats'a, who was standing in the rear of the house, and took off his head ring first, then his neck ring. He cut off the arm rings and anklets and gave them to LamāLa. Then he asked Nau'aqala to bring blankets and ornaments made of red cedar bark. Nau'aqala went to fetch them from his bedroom, and when he had returned, Tō'qoamalîs proceeded to dress the hā'mats'a. He put the blue blanket over his back and cedar bark ornaments on his head, his neck, his arms, and around his ankles. He also tied a dancing

apron around his waist and strewed eagle down on his head. Then he said, "It is done."

The young ha'mats'a cried "hāp, hāp, hāp," and attacked the people.

Now the singers began the third song:

1. The cedar bark of the winter dance is all around the world.
2. The eagle down of the winter dance is all around the world.
3. The songs of the winter dance are most powerful all around the world.
4. For me cried hāp, BaxbakuālanuXsī'waē, the great magician.

During this song all the hā'mats'as were dancing in standing posture and the women were dancing for them. At the end of the song they all stood in the rear of the house.

After a short while the singers beat time again and commenced the fourth song of the hā'mats'a:

1. Nobody can imitate your cries, great BaxbakuālanuXsī'waē, great magician, hamā mā.
   Nobody can imitate your dance, great BaxbakuālanuXsī'waē, great magician, hamā mā.
2. I was taken into the room of BaxbakuālanuXsī'waē, the great magician, hamā mā.
   I received the red cedar bark of BaxbakuālanuXsī'waē, the great magician, hamā mā.
3. He put into me all the dances, BaxbakuālanuXsī'waē, the great magician, hamā mā.
3. The cannibal pole is shaking, the pole of BaxbakuālanuXsī'waē, the great magician, hamā mā.

When the song was nearly ended, the hā'mats'as disappeared in their secret room, led by Ts'ā'qoalag·ilîs.

Then Lo'Xuaxstaak" stepped forward, still holding his copper, and spoke: "Now that is the end, friends. You have seen my way. This is my way." With this he pointed to his copper. "This is the price of a hā'mats'a. I do not mean you, Kwakiutl; I mean my rivals in my own tribe. They all want to have hā'mats'as, but they want to show them cheaply without giving away a copper." The Kwakiutl interrupted him now and then with cries: "That is true! your words are true, chief!" Lo'Xuaxstaak" continued: "Our hā'mats'a touched some of you, Kwakiutl, in his excitement and hurt you. This copper, the face of which is engraved with the design of the grizzly bear, is worth 500 blankets. It is to pay those whom our great friend has bitten. You, La'msitasō, were bitten this morning. Here are 50 blankets of this copper for you; and you, Hō'lElitē, 50 blankets of this copper for you; and you, G·a'lg·alXōla, 50 blankets of this copper for you; and you, Nō'Lq'auLEla, 50 blankets of this copper for you; and you, K·ēx·, 50 blankets of this copper for you; and you, Qā'wiqam, 50 blankets of this copper for you; and you, Nu'xnēmîs, 50 blankets of this copper for you; and you, Mē'qoadaxstala, 50 blankets of this copper for you; and you, K·ā'qoLē, 50 blankets of this copper for you; and you, La'mg ala, 50 blankets of this copper for you. That is all. Now, Qoā'yuqoalag·ilîs, I will ask you to come and tell the story of the

hā′mats'a, for the tribes say we own neither hā′mats'a nor other dances. That is all."

Then Qoā′yuqoalag·ilîs came forward. The Koskimo placed a box for him in the rear of the house. He sat down and began:

"Be quiet and listen to me, for I am going to tell you the story of this hā′mats'a, which will show you that we, Koskimo, G·ō′p'ēnôx, L'ā′sq'ēnôx, and Gua′ts'ēnôx, do not steal winter dances from you, Kwakiutl, nor from other tribes. All the winter dances were given to us by the Maker of Man in the beginning of the world. The hā′mats'a whom we have seen to-night comes from Hai′alik·awē. All the clans Hahai′alik·awē of all the tribes in the whole world have a right to a ha′mats'a with raven whistle, for Hai′alik·awē had a hā′mats'a with a raven whistle at the place which we name Lalā′t'ē, and his hā′mats'a's name was Qā′yuL and Qalamā′lag·ilîs. We may use either of these names for our hā′mats'a. We will call him now Qā′yuL, and if he should be taken away again by BaxbakuālanuXsi′waē, we will call him Qalamā′lag·ilîs. You, Kwakiutl, you always use hemlock branches for your ha′mats'a, for it was given to you in this manner by the Maker of Man. It was given to us to use balsam pine for our ha′mats'a and for all other dances. The white rings you saw on the head ornaments of our hā′mats'a are the same as worn by BaxbakuālanuXsî′wae when he was excited. The attendants passed ropes through these rings to tie him down, that he might not leave his house and devour his people; and the trail of his ornament served for his attendant to hold him. You also saw the streaks of blood running from the corners of his mouth to the lobes of the ears. They indicate that BaxbakuālanuXsī′waē lives on nothing but blood. That is all."

He had hardly finished when Lō′Xoals, a Koskimo, came forward from the rear of the house holding a single blanket. He spoke: "Look at me. See this single blanket! I am tired of waiting so long at this place for one solitary single blanket. Now I will show you that I do not care for a single blanket." He tore it, threw it into the fire, and continued: "Now you who saw it in the fire take good care to keep it warm. All single blankets will go there hereafter. We are too great a tribe to receive only a single blanket each." Then LamaLa went up to him and stopped him. He held six button blankets and said:

"Friends on the other side! Each of us has something to say. Lō′Xoals has had his way when he wanted to burn this blanket. Kwakiutl, he did not mean you. Do not feel offended by it. I have rivals in my own tribe and I must wake them up from their sleep, for they do not see that it is hard work for us to fight you with property. We are the Koskimo, who have never been vanquished by any tribe, neither in wars of blood nor in wars of property. Now I will ask you one thing: Treat me well. Of olden times the Kwakiutl illtreated my forefathers and fought them so that the blood ran over the ground.

Now we fight with button blankets and other kinds of property, smiling at each other. Oh, how good is the new time! That is all. Now to these button blankets. Son-in-law, come and stand where I can see you." Then Nau'aqala stepped to the front of the house and said: "Here I am." LamaLa continued: "I understand that you have no button blankets. Therefore, I thought I might bring you some. Here are six button blankets. I took them from your wife's back. Now come and take them, and do with them as you please."

Nau'aqala asked: "What did you say, my father-in-law?" Then LamaLa repeated: "I told you, son-in-law, that I had taken six button blankets from the back of your wife and I give them to you. Now come and take them." Nau'aqala spoke: "I will go, for I am not afraid to go and take them. I have given away button blankets three times, and this will be the fourth time. Now I will go and take them." Then he went back to his place and said, turning toward the people: "Oh, my tribe! look at these button blankets and see what I am going to do with them. One of you shall tell me what to do with them."

To this the old woman who was standing near the door replied: "My tribe, I want to say a few words to you, and particularly to my son, who asked to be told what to do with these blankets. Friends, you all know my name. You knew my father and you know what he did with his property. He was thoughtless and did not care what he did. He gave away or killed slaves; he gave away or burnt his canoes in the fire of the feast house; he gave away sea-otter skins to his rivals in his own tribe or to chiefs of other tribes, or he cut them to pieces. You know that it is true what I say. This, my son, is the road your father laid out for you and on which you must walk. Your father was no common man; he was a true chief among the Koskimo. Do as your father did. Either tear up these button blankets or give them to our rival tribe, the Kwakiutl. That is all."

Lo'Xoaxstaak^{u} arose when she had finished and asked: "Did you hear what our aunt said? I will not block the road my father laid out for me. I will not break the law that my chief laid down for me. I will give these button blankets to my rivals, the Kwakiutl. The war that we are having now is sweet and strong." Then he gave the button blankets to the Kwakiutl; first to Yā'qoîs, then to the old chiefs. After they had been distributed, Lo'Xoaxstaak^{u} said: "These button blankets are the red cedar bark that I have taken from the head of my hā'mats'a. Next the men brought him 40 white blankets, and he said: "These white blankets are the red cedar bark that I have taken from the neck of my hā'mats'a and I am going to give them to you, Kwakiutl." He distributed them among the next in rank. Then he took the calico and said: "This is the red cedar bark that I took from the arms and from the legs of my hā'mats'a. I will give it to the women and children of the Kwakiutl." They tore it up, and gave the pieces to the Kwakiutl—first to Yā'qoîs, then to the others.

With this the festival ended, and the people went home. It was about 1 a. m. when the calico was distributed.

About 7 p. m., November 23, Hō′LElitē sent two messengers, NōLElag·ilîs and KuLE′m, to call all the men of the Kwakiutl tribe to a secret meeting to be held in his house. The messengers went into all the houses and called the Kwakiutl, whispering into their ears. They slipped out at once and went to Hō′LElitē's house. Great care was taken that the Nā′q'oaqtôq and Koskimo should not know what was going on. As soon as the men were assembled, Hō′LElitē arose and spoke: "Indeed, friends, you have gratified my wishes, for you all have come as soon as I sent for you. I am glad that you are keeping the laws that were handed down to us from the times of our grandfathers. You will have observed that the Koskimo are likely to beat us in our war with property. Therefore I ask you not to be asleep, else the Koskimo will surely walk right over us, friends! Wake up and open your eyes. Do not let the wealth of our rivals blind you. Our ancestors have never been vanquished. I do not want to see the Koskimo vanquish us now. I have called you in order to inform you that my chief Sē′g·ag′ila is going to give a winter dance, and I will ask you, my friends, how we shall begin it. I want you to decide in regard to the manner of beginning the ceremonial. That is what I wanted to say to you, wa, wa."

The men remained silent for about twenty minutes. Then Nu′xnēmîs, the chief of the winter dance of the Kuē′xa, arose and said: "Indeed, Ho′LElitē, you are always keeping the rules laid down in the times of our ancestors, for instead of beginning the ceremonial without notifying us, as others might do, you tell us of your plans and secrets as our forefathers used to do; and that is the right way." Then he turned to his own tribe the Kuē′xa and said: "Don't you feel glad that my friend Hō′LElitē, the great magician, was kind enough not to keep his secrets, but let us share them? You also, La′mg·ala, ought to feel proud that he invited us to know of his plans. Do you not think that it would be best if the clothing of Wīnā′lag·ilîs were brought out by this secret meeting? You all know what I mean. The clothing of Wīnā′lag·ilîs consists of hemlock branches, and his play is ĀmE′lk" or NūLanūLdEls. The ĀmE′lk" must be shown at daybreak, and the NūLanūLdEls may be shown at any time of the day. I think it would be best to surprise our rivals, the Koskimo. Let us call all the men and women before daybreak to-morrow and go to the meeting place which our forefathers used for the ĀmE′lk". You all know the rules of the ĀmE′lk". That is all. Now I have finished."

Then Hō′LElitē replied: "Thank you, my friends. Thank you, Nu′xnēmîs, for what you said. You are the only one who wants to keep the rules that were given to us by our ancestors. Friends, I want to ask you one favor: Arise before daylight. Tell me now if you are willing to do so and to follow our friend Nu′xnēmîs's advice. Let the

women of your households know about this secret meeting and keep it from our rivals, the Koskimo. I will send two messengers in the morning to call you by tapping at your bedrooms. That is all. Now go home and have a short sleep." After this speech all went home.

November 24.—Early in the morning Hō'LElitē sent NōLElag·ilîs and KuLE'm to call all the Kwakiutl. They went around and tapped at the outside walls of the bedrooms. The people arose at once and went out to the place where the ĀmE'lkᵘ is held. This place is about 150 yards from the east end of the village at the edge of the woods. The men went into the woods and cut off hemlock branches, from which they made head rings and neck rings; with these they adorned themselves, as well as the women. Then Nu'xnēmîs told the people to get ready for the first cry, and he himself sung out "hō" as loud as he could. Then all the people beat the boards, which were laid down at the place of meeting, and cried "hē." Next all the ha'mshamtsEs dancers—all of whom are women—were tied to a rope which was held by a man. The bear dancers were tied together in the same manner, and led by another man, one of the old bear dancers. Then the ha'mshamtsEs began to cry "wîp wîp" and the bears began to growl. Now Nu'xnēmîs sang out again, "hō;" the people beat the boards and responded by the cry "hê." The ha'mshamtsEs began to cry "wîp," the bears began to growl "wo hā," and the fool dancers cried "wīhī'." After a short interval, Nu'xnēmîs sang out "hō" for the third time, and the people and the dancers responded in the same manner. Then, while the men were still beating time and while the various cries were being uttered, Yā'qoîs, the chief hā'mats'a, rushed out of the woods, followed by his six attendants, and crying "hāp, hāp, hāp, hāp." He ran about among the people in a state of great excitement.

Nu'xnēmîs spoke: "Let me ask you what has happened that Yā'qoîs should be so much excited?" Hō'LElitē replied: "We have not been in the house of BaxbakuālanuXsī'waē. But our friend Yā'qoîs has passed through it eight times. He knows all that belongs to the winter dance, and he knows all the mistakes that may be made. Yā'qoîs has seen that we have no chief t'ō'X'uît among us to throw the supernatural power among our friends here, and that has made him wild. Therefore I will call someone who has been t'ō'X'uît four times to be our chief in the ĀmE'lkᵘ." Then he called a woman, saying: "Come, Wīlanqoa'lag·ilîs! Take your place, for you were made t'ō'X'uît by your father four times, so that you are not afraid of anything." Then he called all the people to stand in a square, and the woman took her position in the middle. Upon Hō'LElitē's command, the men commenced to beat the boards. He asked K·ēx· to step inside the square, and to show the woman what to do. He obeyed, and while the people were beating the boards K·ēx· began to dance in a stooping position. He looked up and down and trembled while he was running backward and forward with short steps. Finally he turned to the right and

caught the supernatural power of the winter dance between his palms. Four times he ran backward and forward, swinging his hands, the palms of which were pressed together, then he threw it upon the people, who began to laugh, while some cried "hāp" and "wīhī'." Now the woman was told to try to catch the supernatural power. She went through the same motions, and when she caught the spirit, the sound of whistles which she had hidden in her mouth was heard. Four times she ran backward and forward, then she threw the supernatural power among the people, who stooped down at once. Then they began to laugh and to utter their cries. This continued for a few minutes, then she caught the spirit again, whereupon Nu'xnēmîs sung out "hō" for the fourth time. The people responded "hê."

Meanwhile the day had broken. The people arranged themselves in procession, which was led by Yā'qoîs and his attendants. They were followed by the bear dancers; then came the fool dancers and the ha'mshamtsEs, and finally, as a fourth group, the people surrounding the t'ō'X'uît who had thrown the supernatural power into them. Yā'qoîs first entered the house of Nu'xnēmîs, followed by the rest of the procession. Wīlanqoā'lag·ilîs was the last to enter. She was accompanied by Hō'LElitē and Nu'xnēmîs, who remained standing, one on each side of the doorway. As soon as she had entered, she commenced singing her secret song:

1. O friend! I have been made to set everything to rights. O friends! yo, yo, yo, yēi, friend! yo, yo, yo, yēi, friend.
2. O friend! I carry in my hands the dances of my rivals. O friends! yo, yo, yo, yēi, friend! yo, yo, yo, yēi, friend.
3. O friend! They tried to strike me with the death bringer. O friends! yo, yo, yo, yēi, friend! yo, yo, yo, yēi, friend.
4. O friend! And the fire of death has been put into my hands. O friends! yo, yo, yo, yēi, friend! yo, yo, yo, yēi, friend.

She sang this song standing in the doorway, and during this time G·a'lg·alxōla, who was standing among the people, said: "I am glad that you have come, and that you compel us to follow the laws of our ancestors; but sing louder, that we may know who you are." Then he turned to his people and continued: "Take care! Sometimes the t'ō'X'uît will come to a house in which there are many people and will benefit them, but generally they do harm to them." Then the woman stopped singing. Hō'LElitē gave a signal to the people to beat time, and Nu'xnēmîs cried "hō," as before. The people responded "hê," but kept on beating the boards. Then the t'ō'X'uît went forward to the rear of the house, leaving the fire to her left. She moved in a stooping position, looked up and down, and finally caught the supernatural power. Then the whistles were heard again. She threw it among the people, who first cried "yā," as though she had missed them; but then they began to utter their various cries. After a few minutes she took the spirit back again and all were quiet.

Then G·a'lg·axōla said: "What was the matter just now? I told you

to take good care and not to yield, and you seemed to have lost your senses. Take better care the next time."

Then they walked out of the house in the same order, the t'ō'X'uît with her two attendants being the last. When Nu'xnēmîs left the house, he cried again "hō," and all the people responded "hê," but the hā'mats'a cried "hāp, hāp, hāp, hāp," the bears cried "wo, hā," the fool dancers "wīhī," and the ha'mshamtsEs "wîp, wîp." In this manner they visited four houses. In each house the t'o'X'uît caught the supernatural power and threw it upon the people, as described heretofore. Every time she threw it the uproar increased. The people shook their blankets to indicate that the power had entered them. They laughed and cried, and kissed each other's wives, for during this time there is no jealousy and no quarreling.

After they had visited four houses, Nu'xnēmîs led them back to the winter dancing house of Sē'g·ag·ila. They were marching in the same order as before. Just before they entered, Hō'LElitē spoke: "Friends, I missed one of our number." The people asked who it was, and he replied: "It is the son of our friend Sē'g·ag·ila. The spirits have taken him away. Let us go into the house and see what we can do for our friend." Then the people entered. As soon as all were in, the whistles were heard in the hā'mats'a's room. Then Hō'LElitē spoke: "Enter this house of our ancestors and observe the rules that were laid down for the winter ceremonial. Now be happy. I thank you that you all have come to this morning's ceremonial, for I do not like to have the Koskimo or other strangers laugh at us. If any of you should have gone home before we finished, they might have had cause for doing so. We have done well, and the spirit of the winter dance is pleased with our work, else he would not have taken one of our number with him. Therefore I myself and my friend Nu'xnēmîs are pleased with you. We can not do anything without you, for what is the power of a chief without the help of his tribe? You call me and Nu'xnēmîs chiefs of the winter ceremonial, but we have no power without you. Now I have finished." Then Nu'xnēmîs sang out once more "hō," the t'ō'X'uît repeated her secret song, and when she had finished Hō'LElitē gave the signal for the people to beat the boards. She stretched her hands forward and caught the supernatural power in the same manner as described before, and threw it upon the people, who cried again. Three times she caught it and threw it upon the people. The fourth time after she had caught it she threw it up into the air. Then she sat down.

Now Hō'LElitē arose and spoke: "O friends! Do you see how I look? I am almost ready to run away from this house of the supernatural power. I was standing near the post and next to me was standing K·ēx·'s son. As soon as our friend Wīlanqoā'lag·ilîs caught the supernatural power the fourth time and threw it upward, it came and took the son of our chief K·ēx· along. Friends, there was one taken away this morning,

and a second one was taken just now, so there are two of our number missing to-day. If the supernatural power continues in this manner, we shall have no children left. Therefore I think I will go home and hide." When the people heard this, they cried: "Oh, do not go! What shall we do without you, the only one who can speak with the spirit of the winter dance."

G·a'lg·axōla said: "Indeed, Hō'LElitē, your words are true. But why do you want to run away and leave us in the dark? Your name was given to our ancestors as a light by which to see the spirit of the winter dance, and you also, Nu'xnēmîs, were made chief of the winter dance of the Kuē'xa. If you run away, what can we do, for none of us can speak to the spirits as you two friends do. Take care, and let us stand our ground. Let us face the spirit of the red cedar bark. Now pass around the batons and let us sing the songs that our grandfathers used in order to drive away the birds of the red cedar bark, for I am afraid of the way in which our people are disappearing to-day. Now I have finished."

Then Nu'xnēmîs called all the men together, struck the board once, and cried "wō wō ai." Then all the people struck the boards together and cried "wō wō ai a ai a k·as ai," beating time rapidly for a few minutes. Then Nux'nēmîs struck the board with one sharp stroke and cried "wō." Then all the people did the same, all striking the boards at the same time with one short, loud rap. Immediately following this rap they beat the boards rapidly, crying "hē," drawn out very long. Then they were quiet, but the whistles continued to be heard.

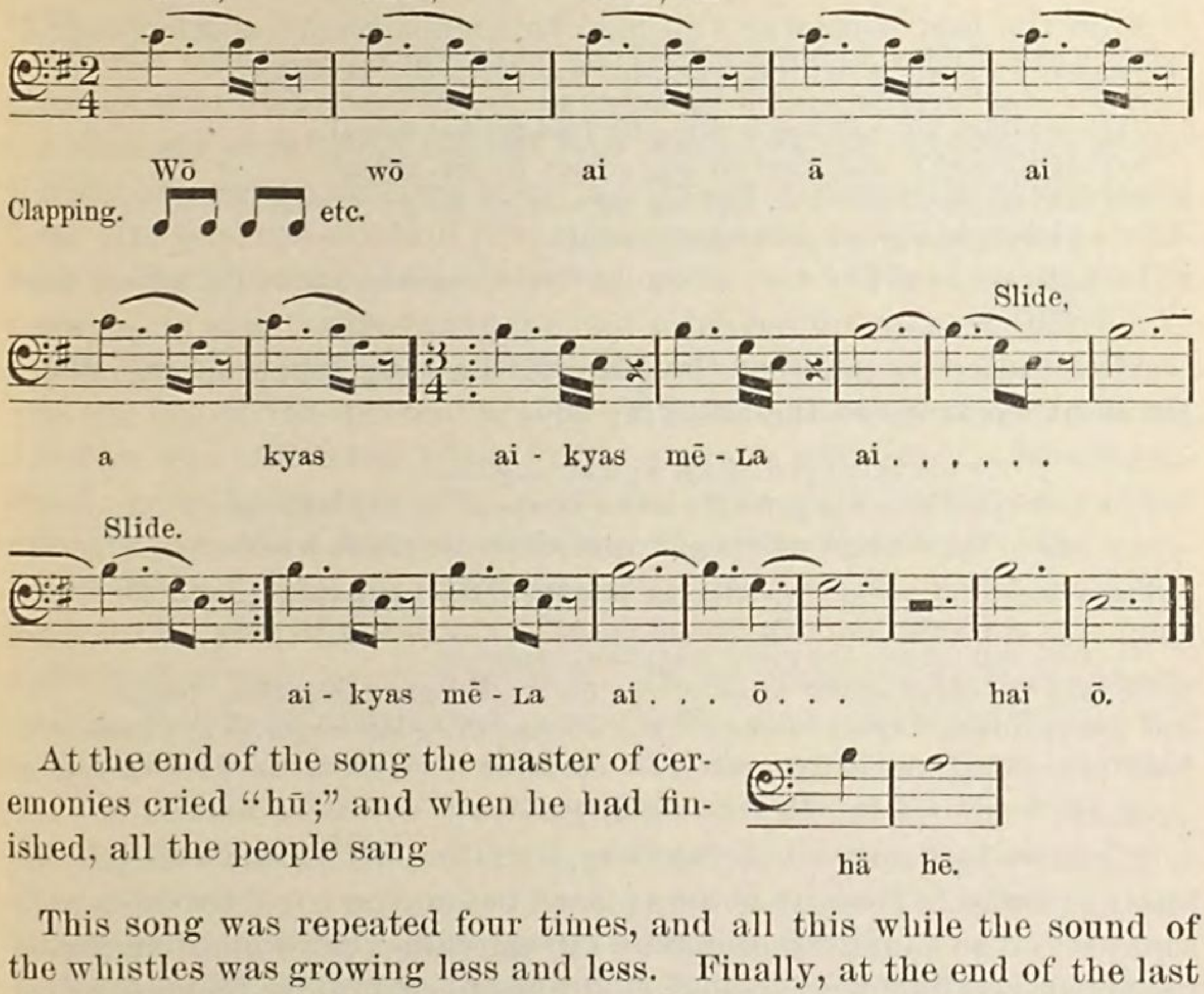
G·a'lg·axōla said: "You have failed to drive away the spirits with this song." Then Nu'xnēmîs gave another rap and cried "hama ma ma." Then all the people began to strike the boards rapidly, and cried "hama ma ma ma ma," continuing to beat the boards for a few minutes. This cry is intended to drive away the grizzly bear. Then Nu'xnēmîs gave a short rap, crying at the same time "hamam," and all the people gave a short rap and cried "hama ma ma," and then ceased beating. The whistles were still heard.

Then G·a'lg·axōla said: "You have missed the spirit of the cedar bark again. Nu'xnēmîs struck the boards as before and cried "yihi i i i." Then the people took up the cry in the same manner as before, crying "yo hi i i i hū ū ū ū," and again Nu'xnêmîs gave the signal to stop, as before, by the cry "yihi," and the people finished, crying "yihi i i i hū ū ū." Still the whistles continued to be heard.

Again G·a'lg·axōla said, "You missed the spirit again, for the whistles continue to sound. Now try to find a song that will drive them away." Now Nu'xnēmîs cried "wup," as before, and the people repeated "wup, wup, wup." Nu'xnēmîs gave the signal to stop, as before, crying "wup," to which the people responded by crying "kux, wup, wup, wup." Now the sounds of the whistles began to grow a little weaker.

Then G·a'lg·axōla said: "Now you have hit the birds of the ceremo-

nial, for you hear that their cries have changed. Look out, Nu′xnēmîs and Hō′LElitē, and you members of the seal society, and you quē′qutsa." Then Nu′xnēmîs gave a new signal and began to sing, accompanied by all the people, who were beating time very rapidly. The song was as follows:



At the end of the song the master of ceremonies cried "hū;" and when he had finished, all the people sang

This song was repeated four times, and all this while the sound of the whistles was growing less and less. Finally, at the end of the last song, the people cried in response to Nu′xnēmîs's cry, "wo hä′hē, wā wā" and with this the sound of the whistles ceased altogether.

Then G·a′lg·axōla said: "Wa, wa! I can not say much now, for we are surely all very hungry. But I will thank you for driving away the birds. I am afraid of the way in which our children were taken away this morning. Our friend K·ēx· has asked me to invite you, Yā′qoîs, to stay and to have something to eat, and all you, members of the seal society, and you, quē′qutsa. Now take your seats." Then all the people sat down in their proper places, while Yā′qoîs retired to the secret room of the hā′mats'a in the rear of the house. Then K·ēx· and his friends brought dry salmon and roasted it. They sent a piece to Yā′qoîs, and then distributed the rest among the members of the seal society and the quē′qutsa. They sent a dish of grease to Yā′qoîs, and then gave the others in order, one dish to every four persons. After they had eaten, K·ēx· asked them to keep their seats, as he intended to give another feast. Hō′LElitē, who acted as K·ēx·'s speaker, said: "Now friends, my chief K·ēx· is going to give another feast. Let us sing and let the world know that we are feasting. Pass the batons.

We have much to do before this night." One man distributed the batons, and now Nu'xnēmîs began the song of the hā'mats'a Bu'bagolayu of the Kuē'xa, and the latter tribe sang as follows:

1. You are looking for food, great magician, hamē.
2. Sweet is what you will eat, great cannibal, hamē.
3. You will swallow men alive, great cannibal, hamē.

After the first song was finished, Nu'xnēmîs began another song of the same hā'mats'a, which was also sung by the Kuē'xa:

1. BaxbakuālanuXsī'waē was looking for food for me, hamai.
2. BaxbakuālanuXsī'waē was looking for men for me, hamai.
3. BaxbakuālanuXsī'waē was looking for corpses for me; therefore you are feared by all, as you will devour men, hamai.
4. Yes! all are afraid of you, eldest brother! You who empty the houses, great magician,

After these two songs of the Kuē'xa, the song maker of the Walas Kwakiutl commenced the following song:

1. I want to eat you; I am a great magician.
2. Your dance is getting greater all the time, you true dancer.
3. Your dance is growing greater all the time, you true dancer.

The second song of the Walas Kwakiutl was as follows:

1. He cried hāp for me, the great magician, hamamai.
2. He sang the songs of the winter dance for me, the great magician; hamai.
3. I went through BaxbakuālanuXsī'waē's house, the great magician's; hamamai.
4. I went to the far end of our world. I am liked by all as far as the edge of our world. All try to imitate me; hamamai.

While the last song was being sung, K·ēx· and his friends were preparing the berries. The dishes were placed in four rows, and two men were sent around to count the people by threes, while a third one distributed the spoons. Then K·ēx· called Hō'LElitē to come. He took up a dish and said: "Now friends, we are ready to eat. But I do not want to have any trouble. I want to keep the weather calm for our great friend Yā'qoîs, for if I do not give to him first he will grow as wild as the storm. This dish is for you, Yā'qoîs." Then he took up another dish and said: "This is for you, seals, and for your friends." Thus the dishes were all distributed, one being given to each three persons. Before they began to eat, a man was sent to Yā'qoîs, to see if he had commenced eating. Soon he came back carrying the empty dish and laughing. He said: "Look at me, friends. Our great friend Yā'qoîs must have been hungry, for his dish was emptied before I came to see him. Now eat, for you must be hungry also." Then all began to eat.

Hō'LElitē arose, holding his speaker's staff, and said: "Friends, I feel happy on account of this day's work. It seems to me I am seeing our grandfathers, and that pleases me much; and it must please you too, La'mg·ala; and you, Lā'LasqEm; and you, NE'msqEmut; and you, K·ē'qalē; and you, Ts'î'lg·axsta. I know you all feel very happy to-day. Only do not forget the laws of our grandfathers. But I must not say

that again, for you are keeping them well." While he was saying so, some of the old people remarked: "Yes; it is true." And he concluded: "I know we are glad to-day. Now eat, for our chief's food is sweet."

Now the people ate, and when they had finished, most of them went home. The hā'mats'a's whistles were heard during this time in his room.

About 2 p. m. the people came to fetch blankets, which were to be given away in honor of Yā'qoîs, in payment of his last ecstasy. When the blankets were being brought into the house, the tally keeper of the G·ō'p'ēnôx came in to look after the proper distribution of the blankets. He gave the names of the clans and the number of blankets which were to be given to each name in each clan. The blankets were arranged in such a manner that those intended for each clan were laid in the same direction, while those of the next clan were placed crosswise on top of the preceding lot. Wherever a man was to receive blankets who still owed some to the giver, a number of sticks corresponding to the number of blankets due were placed in the pile, which were given to the debtor as canceling the debt, according to the number of sticks. After the pile intended for the G·ō'p'ēnôx was arranged, the tally keepers of the other tribes came in and looked after the blankets which were to be given to them. In the evening a feast was given, the blankets were distributed, and shortly after the beginning of the feast the hā'mats'a Yā'qoîs came in and danced three times; the first and the second time in a squatting position with an ordinary blanket, but the third and fourth time in a standing position and wearing a Chilcat blanket. As everybody was tired on account of the long ceremonies of the preceding nights, the feast closed early.

November 25.—Early in the morning T'ō'kuiL, chief of the Koskimo, sent his two speakers, Ā'Labala and WalkaLtsEmt, to the chiefs of the Kwakiutl, to inform them that on this day the Koskimo intended to perform their ceremonies, and requesting them to postpone their festivals to another day. They also asked them to keep the matter a secret from the young men. At the same time the speakers invited the Koskimo to come quietly to the house of their chief. At 8 o'clock they were assembled. Then a hā'mats'a was placed at the entrance, in order to prevent outsiders from coming in, and members of the tribe from leaving the house. Ā'Labala, the first speaker of the Koskimo, arose and spoke in a low voice so that he could not be heard outside the house:

"Koskimo, you have assembled in the dancing house of our grandfathers. Thank you, friends, for having followed the first call of our chief T'ō'kuiL. Listen to me, men, women, and children! You have the largest cedar bark in the whole world, and you keep the laws of your grandfathers more strictly than anyone else. We have two chiefs in our tribe, and therefore we can not be vanquished in our strife with property. Look out! Do not let the Kwakiutl vanquish you, for they

are few only. See, how many you are! There are enough Koskimo in this house to fill the seats all around the walls. The Kwakiutl could not fill one-half of the seats in this house. Therefore they can not vanquish us. Take care, friends! As I said before, we have a good tradition to follow. Therefore we can afford to laugh at them. The Kwakiutl say that we have no tradition, but our chief T'ō'kuiL, who is going to give the ceremonial, belongs to the family of G·ē'xdEn. You know that he had a hā'mats'a whose name was Nauayolis (the only one in the middle of the world). Who has a name as great as that? And if I should mention all the traditions and the great names of our grandfathers, the people would run into the woods, for they have no names like ours. Therefore, take care, friends! It is not my office to let you know the plans of our chief. I have said enough."

All were quiet for about half an hour. Then Tō'qoamalîs, the chief keeper of the red cedar bark of the Koskimo, arose. He looked up to the roof and down to the floor, and then said:

"Ā'Labala, your words are true. You have seen part of my younger days, for you have seen my father. But you have not seen my grandfather. I have seen him. His rules were strict, but those of my father were a little less rigid. Our rules of the winter dance are much less strict than those of olden times. Thank you, Ā'Labala, for your speech. I paid close attention and found that you did not make a single mistake. Now, friend Ā'Labala, look out and take notice of all I say in the speeches that I make during the winter ceremonial, at marriages, when the marriage money is refunded, and at summer festivals; for all these were learned from my great-grandfather. They were given to my father and to my great-grandfather at the beginning of the world by the Maker of Dances. Thus I obtained the large box in my house, in which I keep all the dances and the red cedar bark and the names and traditions of our great-grandfathers. After I am dead, I want you, Ā'Labala, to take my house and the large box in which I am keeping the laws of our grandfathers. Next winter we shall have the greatest winter dance that has ever been known, but I do not want to direct it, for I will give all my rights to you, friend Ā'Labala. After this winter you will have to ask his advice about everything, not mine.

"Now I will speak about our present meeting, for I know you all wish to know its object. You can not know, for it is the office of the chief of the winter ceremonial to inform you. You know that I am the chief of the winter ceremonial. My name is Tō'qoamalîs. It is renowned among all the tribes all around the world, for I have given blankets to all of them, and whenever I speak they all hear me. The spirit of the winter dance even hears me, and you also, my tribe, hear me. This is a secret meeting of our winter dance. You are aware that the grandson of our chief T'ō'kuiL has been taken away by the spirit, and that T'ō'kuiL's sister was taken away at the same time. Last night Bax-bakuālanuXsī'waē came to me and told me that these two have passed

through all his customs and rules, and that they are on their way home. Therefore I have called you into our winter dance house, that you may prepare for them. They will make their appearance to-day. Keep yourselves in readiness. The spirit never lies, and BaxbakuālanuX-sī'waē does not keep the novices longer than four days, and it is four days to-day since our children have disappeared. Now I have finished."

Every now and then the old men would interrupt him, saying: "Your words are true," or "Your words are good, chief," or "Go on! teach your children how to speak." He remained standing a short while without speaking.

Then T'ō'kuiL came forth from behind a curtain that was stretched along the rear of the house, and said: "O Koskimo! I am pleased that you have come to this house. I did not put it up for myself; I did so for the greatness of your name. How glad I am, for I believe I heard our chief Tō'qoamalîs say that BaxbakuālanuXsī'waē came and told him that my grandson and my sister are on their way home. Is that true?" Tō'qoamalîs replied: "It is true." Then T'ō'kuiL continued: "Let them come, for I have my property in readiness." Tō'qoamalîs said: "I did not finish. Let our leaders prepare to meet the two new hā'mats'as who are on their way home from BaxbakuālanuXsī'waē, for they will be excited, and we must not call upon the quē'qutsa to be the first to meet them. We must ask some who have greater powers. I will ask our friend the great Pō'Xuiyalas, and her friend the great G·a'loīL, and the great KōkuiLala, and the great Q'ē'q'anqoala, our four mā'maq'as who have passed through the t'ō'X'uît ceremonies to be our leaders. Next shall follow the Hē'mElk, the old hā'mats'as. I will ask you, Nā'noqoîs, and you, great Nau'alg·îs, and your friend the great Qoā'ts'amya, and your friend the great Qoā'yuqoalag·ilîs, and your great friend Qoaxkuē'k^u, and your great friend L'ēmElxa'lag·ilîs, to follow the mā'maq'as to defend us from the wildness of the new hā'mats'as. Next I will ask you, Maa'myaank^u; you will form the third group. Dress yourselves as nicely as you can. You have heard the Kwakiutl say that we do not know how to arrange a winter ceremonial properly. Send someone to fetch button blankets from your houses and put them on. Last of all, I will ask you, quē'qutsa. Two of you shall carry a plank on which the Maa'myaank^u shall beat time to accompany their song. Two others shall carry a plank on which the mā'maq'as shall beat time to accompany their song, and you shall also carry a plank on which you shall beat time to accompany your own song. And one of you shall carry a skin drum. Our friends the great hā'mats'as shall not sing, because they have to look after their whistles. There shall be four attendants for each of the new hā'mats'as, and I will name them now. You, Hē'lek·ats'e, K·ā'qōLē, ĀLanudala, and your friend Hē'lekamig·alîs, keep ready to attend the new hā'mats'a, who is going to come back to us to-day. You, Qoā'gîs, Nalulala, X·ī'x·ēqala, and your friend, Lelā'asnuk^u, keep ready to attend the

other hā′mats'a, who is going to come back to us to-day. That is all. These are the rules of G·ē′xdEn, who came down from heaven. My grandfather was of the blood of G·ē′xdEn, according to the tradition. Be very careful, for the Kwakiutl tribes will watch us closely. They will try to find fault with our laws, for they have ways of their own which differ widely from ours. They have no winter ceremonial of their own, and they will try to learn from us. I am not ashamed to show our winter ceremonial, for it is derived from tradition. That is all."

With this he sat down and Ā′Labala arose. He said: "O Koskimo! you have heard the rules of our grandfathers. Try to remember them, and do not forget what our chief has said, for he might die and I might die as well, and then one of you must take my place. That is all, my grandchildren."

Next Lā′gulag·ilîs, the chief of the painting, arose and said: Tō′qoamalîs, it is true what you said. We have traditions which teach us our laws. We are not like our rivals, the Kwakiutl. I tried to discover the origin of their names which they use in the winter ceremonial, but no one could tell me, for they have no traditions. Therefore you, Koskimo, my tribe, may laugh at the little Kwakiutl; for each of our clans has a tradition, or even two, and we may justly be proud of it. Look at me and my name. According to the tradition that was told me by my grandfather, the first Lā′gulag·ilîs was the chief of the paintings for the winter ceremonial. That is now my name. It belongs to the tradition of my clan, the G·ē′xsEm. And my name has existed from the beginning of the world. When the Kwakiutl desire to discover the true history of our ceremonials, tell them the tradition of G·ē′xdEn, for our chief, T'ō′kuiL, is giving his winter ceremonial. Now take care, my tribe. You are aware that I am the chief of the paintings and of the ornaments of the quē′qutsa. We are all prepared now, for we are painted with charcoal that we obtained from Ya′xstaL, according to the legend of the Naqô′mg·ilisala. You know how he obtained the fire of death from the wolves at ƍayaiL. You also remember how he burnt his enemies to ashes and transformed them into stone by means of his fire of death. Our paint is that of Ya′xstaL, therefore we use only black paint and no red paint. The other tribes use very little charcoal and much red paint, because they have no traditions to guide them. I do not allow any red paint to be used in the winter ceremonial, because our traditions do not say anything about the use of red paint. Only the clan NaE′nsx·a are allowed to use red paint, for their chief, Nēna′laats'ēqa, used red paint in the dance nō′nLEm, to indicate the blood of the tribes whom he had killed. Therefore they use no charcoal, but red paint only. They also use white paint in the nō′nLEm dance, because Nēna′laats'ēqa brought this ceremonial down from heaven, and the white paint symbolizes the white clouds. All our ceremonials are founded on traditions which our ancestors were careful to preserve. Now I have finished my speech." (See p. 410 and figs. 129–133, pp. 484–486.)

Then G·ā′sa arose and said: "Did you hear the speech of our old chief? It made me feel proud and happy, for I am a young man and did not know how we obtained our winter ceremonial. Let us remember the speeches and traditions of our ancestors. Take care, mā′maq'as, hā′mats'as, maa′myaank^{u}, and you, quē′qutsa of the Koskimo, Gua′ts'ēnôx and L'ā′sq'ēnôx, for we are all one tribe now. Do not fall and do not laugh, that the Kwakiutl may not sneer at us. I am going to watch you carefully, and if I should see anyone breaking the laws of the winter ceremonial, he will be made a wā′tanEm. He will have to wear a long white feather and dance in all the houses of the Kwakiutl. After his dance he will have to distribute at least one hundred blankets. This will be the punishment for any transgression of the rules of our ancestors."

When he had finished, two men, Nā′kuaLē and Walx·aLtsamt, entered, and the latter spoke: "Be quiet, slaves of the red cedar bark! I have seen our two chiefs who were taken away by G·ē′xdEn's Baxbakuālanuxsī′waē. They look dreadful, dressed in ornaments of balsam pine. I narrowly escaped them." G·ā′sa asked, "Is that true?" When he said so, a man who was standing on the roof of the house secretly gave a signal to the two new hā′mats'as, who were waiting in the woods at the west end of the village. They rushed down to the beach, crying "hāp, hāp." When the people who were assembled in the house heard them, Tō′qoamalis sent G·ā′sa to the roof of the house to look around. He came back and said: "Slaves of the red cedar bark, prepare to meet our two new hā′mats'as."

Then the people left the house, the four mā′maq'as first. They were followed by the six hā′mats'as, who wore ornaments of red cedar bark and eagle down on their heads. Cedar bark was wound in four turns around their arms and legs. Next followed the maa′myaank^{u}, the young women, who also wore rings of red cedar bark, but no arm rings or leg rings. They had a belt of cedar bark and wore button blankets. Their faces were painted black, with three horizontal lines (one over the eyebrows, one over the lower part of the nose, and one just under the mouth) and four vertical lines (one downward from the middle of each lower eyelid, and one from the middle of each temple). When these three groups had left the house, the remaining qūe′qutsa shouted "yū" four times. Then they all rushed out of the house, and followed, in a separate group, the three preceding groups. The mā′maq'as were singing. The hā′mats'as walked on silently. Their heads and arms were held downward. The maa′myaank^{u} were singing and dancing, and the quē′qutsa cried "yū" every few minutes.

When they had reached the new hā′mats'as, the four mā′maq'as surrounded them. The six old hā′mats'as formed a circle around the mā′maq'as. They in turn were surrounded by the maa′myaank^{u}, who held each other's hands. The quē′qutsa surrounded the last in a half circle, also holding each other's hands. Only the four speakers, Mā′a,

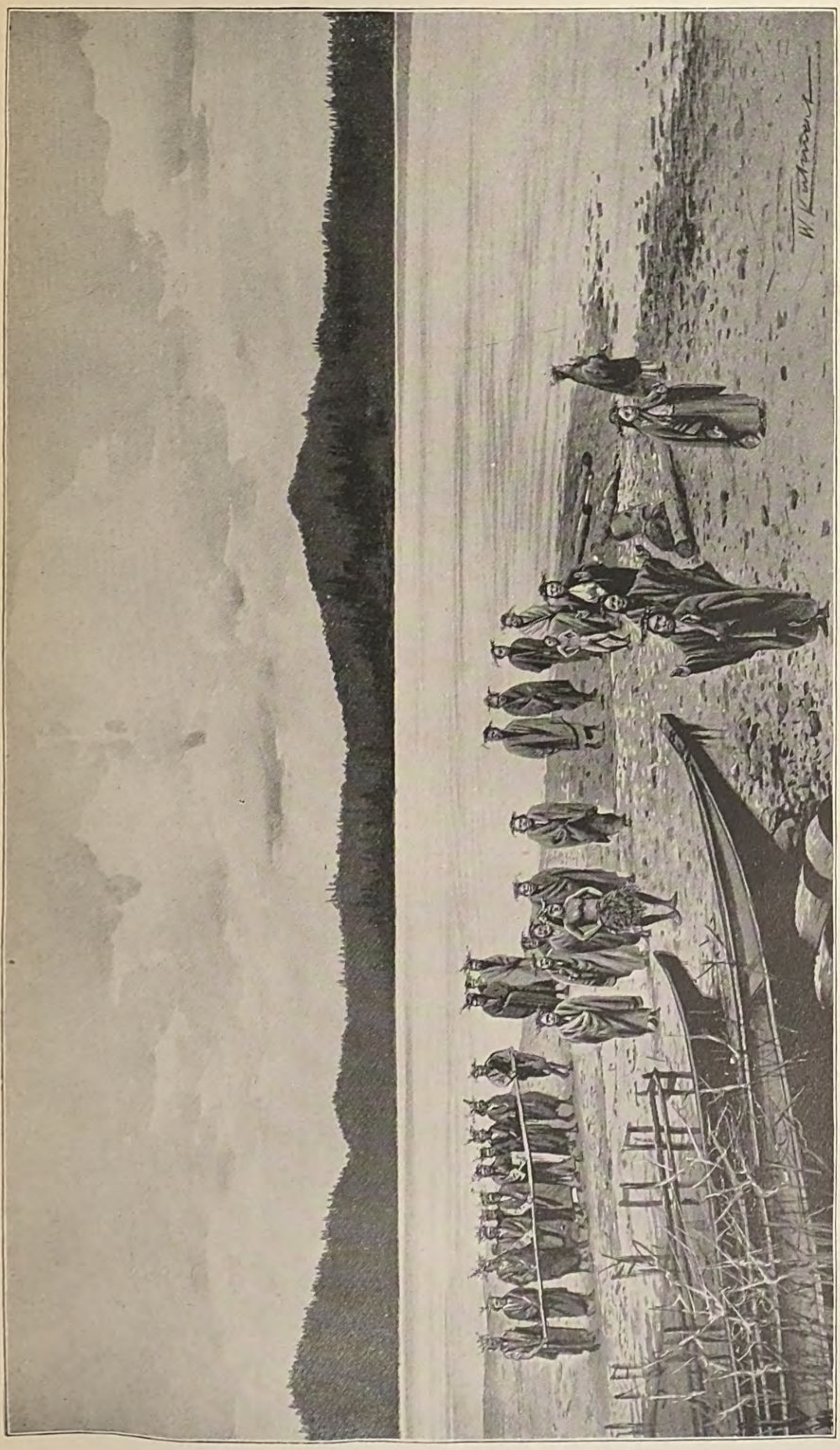
G·ā′La, A′Labala, and Lō′Xoaxstaakᵘ, remained standing outside the circle. The last named shouted from time to time "wē′i, wē′i," stretching his left hand upward, while with his right hand he held the speaker's staff. The people responded by the cry "yū."

Then Mā′a spoke: "Friends, we have caught the grandson and the sister of our chief, who were taken away by BaxbakuālanuXsī′waē. We thought they might be dead and they might never return. What in the whole world can vanquish us? Even BaxbakuālanuXsī′waē is unable to overcome us. I thought the Kwakiutl might have killed these two young people, because they can not overcome us in our war of property. I am glad that they were taken away by the spirit of the winter ceremonial. We are a long way from our village, and I believed that the spirit of the winter ceremonial had stayed behind, but he is following us wherever we go. Now let us return to the woods and learn the song of our novices. BaxbakuālanuXsī′waē gives four songs to all the novices who go to his house, and certainly he has given songs to these two."

The two novices now ran back to the woods, crying "hāp," and the people ran with them. Here they sat down. G·ā′loīL and Qoaqoax·st'ala took their seats in the middle of the whole group. Then Mā′a said: "Now listen, Koskimo! I will ask our singing masters to sing four new songs for these hā′mats'as. Try to learn them as quickly as you can. Sing! singing masters; and put some words against the Kwakiutl into your songs, G·ā′loīL." The first singing master of the tribe commenced his song, and after he had sung one line, he began to beat time. The people joined him, and after he had sung through the whole song, they tried to sing it. Next Qoaqoax·st'ala sung his song in the same manner. Then G·ā′loīL sang the third song, and finally Qoaqoax·st'ala the last one. The two singing masters asked the people if they liked the songs, and T'ō′kuiL thanked them, saying that they were just what he had wished for. Then the people arose, and started to return to the village in the order indicated in fig. 188.

Before starting they all put on head rings and neck rings made of hemlock branches. As soon as they reached the village, Lō′Xoaxstaakᵘ shouted "wēi, wēi," and all the quē′qutsa responded "yū." Then the hā′mats'as began to run about and to dance in the circle, and the people struck up the new songs, beating time on boards that were carried by some of the quē′qutsa. The maa′myaankᵘ also began to dance, and thus they proceeded until they reached the dancing house (Plate 45). The novices were the last to enter the house. There they danced around the fire. The maa′myaankᵘ danced in their honor, and the old hā′mats'as joined their dance. After the second dance they were clothed by Mā′a, and then they began to dance more quietly. After the fourth dance they disappeared into their secret room.

Now the Koskimo, Nā′q'oaqtôq, and the Kwakiutl assembled on the beach and sat down in a square. A grandson of Wā′las, the Koskimo,



THE RETURN OF THE HĀ'MATS'A.
From a painting by W. Kuhnert.

THE HĀ MATS'AS OF THE KOSKIMO IN A FEAST.
From a painting by Kuhnert.

was going to buy a copper. A number of speeches were made, and a woman danced for Wā′las, for whom the people sang a song of joy. During the feast that followed this purchase, the hā′mats'as of the Koskimo sat on a platform with blackened faces, behind the quē′qutsa. (Plate 46).

The members of the seal society of the Kwakiutl were still confined to the dancing house, but every now and then they rushed out of it and knocked the people down. The hā′mats'as hit them, and they broke canoes, dishes, and other things.

In the evening the Koskimo had their t'E′msEla. When the four messengers were sent out to invite the people, the host blew four times upon them, and their head rings were strewn with down. At this time the hā′mats'a rushed out of his secret room, ran around the fire, and out of the door. As soon as he appeared, all the people who happened to be in the house took up sticks, or whatever they could lay their hands on, and beat time rapidly. In the evening the people assembled. The Kwakiutl and Nā′q'oaqtôq took up the front corners.

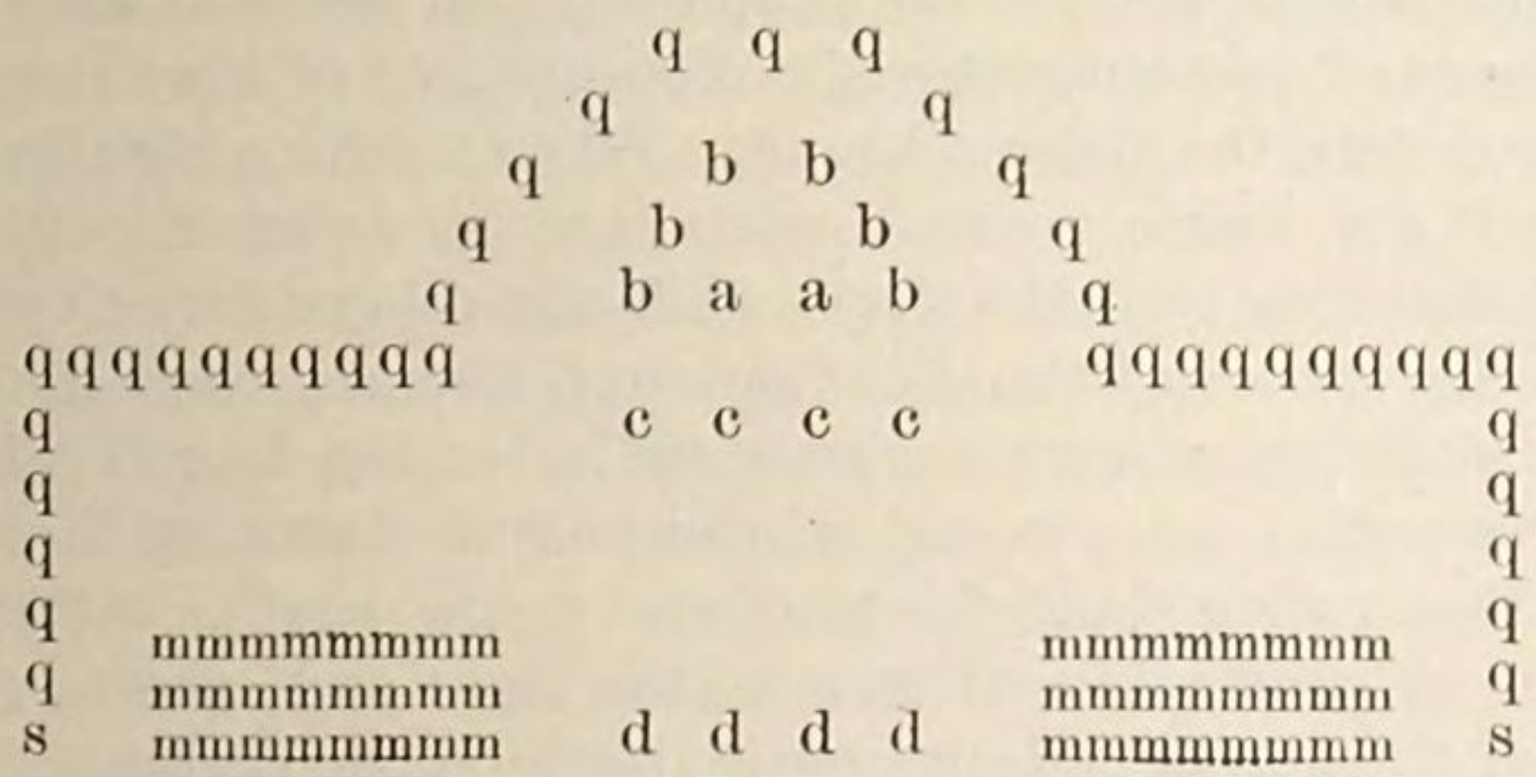


Fig. 188.

THE RETURN OF THE NOVICE.

Order of procession: (*a*) The novices; (*b*) the old hā′mats'as; (*c*) the mā′maq'as; (*d*) the speakers; (*m*) the maa′myaank^{u}; (*q*) the quē′qutsa; (*s*) the singing masters.

When all were assembled, the speakers of the Koskimo came in, their faces blackened. They were followed by a man carrying a ring to which many small horns were attached. As soon as they entered, the people beat time and sang while they were going to the rear of the house. Then the man who carried the ring went to the rear of the house singing and beating time for himself. Another person, who held two lances wound with cedar bark, made a speech, which was followed by another song of the man wearing the head ring. After this the speaker took off the head ring and explained the meaning of the horns. He said: "These seven horns have been put on to the ring by BaxbakuālanuXsī′waē. They belong to the ring of Nō′aqala, the hā′mats'a. He obtained it from G·ē′xdEn. He had two neck rings which were held by the k·î′nqalaLala of BaxbakuālanuXsī′waē. The white rings which are fastened to his hemlock rings are the stars and the one in front is the sun. The red lines on his cheek are the blood

which flowed down where BaxbakuālanuXsī′waē rubbed G·ē′xdEn. White cedar bark is flowing down from the rear part of his ring."

Now people were heard singing outside, but before they entered some blankets were distributed. Three or four speakers who carried lances stepped into the doorway. Then a dancer entered singing; his whole face was blackened. The speaker closed his mouth with his hands, compelling him to stop singing, and spoke to him. The dancer replied: "Nothing is heard." The speaker left him. He continued his song. Then he danced forward and raised his hands alternately. His song was not accompanied by any beating of time. His head ring had a horn in front. During this time the speakers were talking. Finally the dancer was taken to the rear of the fire by the speaker who held the lance. Now the singers began to sing again. QE′ldētsEm and another old man performed a dance, and blankets were given away. Some blankets were held around the fire while the distribution was going on. During this time the speaker who carried the lances went to the door and four women went out.

Now the speaker ordered the people to sing, and a hā′mats'a, accompanied by one assistant, entered. The beating of time continued for some time before the singing began. When the hā′mats'a had reached the rear of the house, seven women entered dancing. One of them remained standing near the door, while the others danced around the fire. In the dances of the Koskimo, one woman, whose duty it is to sing all the secret songs, remains standing in the doorway during the whole ceremony. At the end of the second dance of the hā′mats'a some of the women danced out of the house again. After his first circuit the hā′mats'a danced once to the right and once to the left, in the rear of the house, and disappeared behind the curtain.

Now blankets were again distributed in honor of the preceding dance. Again the women were heard singing outside. They entered, dressed in blankets, and imitating the motions of birds, and thus they danced to the rear of the house, where they remained standing. They were followed by the speaker, who carried the lance. One of them sang, while the others danced in the rear of the house. Then blankets were distributed among the Nā′q'oaqtôq. Next a speaker whose face was blackened went out.

Then the mā′maq'a entered, wearing a blanket. Men and women were talking to him. He put his hands on a baby that was sitting in the lap of its mother, and blew on it. Then he spoke in front of the curtain, and the people replied "wō." Next QE′ldētsEm appeared from behind the curtain, dancing. He was followed by the speaker carrying a lance and a man who carried his child on his arms. The child wore a hā′mats'a head mask. After they had gone around the fire once, the singers began their song and the women danced. Some speeches followed.

Now the arrival of new dancers was announced. A hā′mats'a entered

with his assistants. The people sang for him. After he had danced around the fire once in a squatting position, he danced a second circuit standing. He wore a short blanket and dancing apron, a thin round neck ring, and a flat head ring with small white rings on the front and sides. During his dance he squatted down every now and then and danced a few steps in long leaps. Finally he disappeared behind the curtain. His mother remained standing in the doorway and danced for him. Again the speaker delivered a speech and began to distribute blankets. By this time it was half past eleven.

The women had become hungry, and were eating in the rear of the house, and uttering the calls of their societies every now and then.

A new dancer was announced. The singers began to beat time, and a woman, a t'ō'X'uît, entered dancing, her palms stretched forward and upward. A second woman, and two men who carried guns and blankets, followed her. She was painted black in the following manner: Her right cheek was all black, while on the left cheek two vertical lines extended down the whole face near the nose. Two horizontal lines ran from the lips to the ear, one a little above, the other a little below, the mouth. A long conversation developed between herself and the speaker. The people beat time twice. They divided into two parties and discussed how they would try her. One party went to the door and fetched weapons, saying that they would kill her, to see if her guardian spirit would protect her. Others said they would much rather split her. Then the mother-in-law of the t'ō'X'uît stepped between the two parties and asked them rather to kill her; but when she was beginning to strip off her blanket and shirt they ridiculed her, asking if she was not ashamed to strip in front of so many people, and led her away. The young woman spoke again. Then the men went out. The speakers who held their lances talked, and after a short time the three men returned. Some men holding paddles and staffs were standing in the front row in the rear of the house. Then a woman and a girl ran out of the door and great excitement prevailed among the people in the rear of the house. One man cried: "I am the sī'siuL." Now the t'ō'X'uît took off her blanket and shirt and sat down. Then they led a girl around the fire to the rear of the house. The girl carried a knife. During this time one of the Koskimo women was singing. Now the speaker, whose face was blackened, took a paddle out of the hands of one of the men. The woman sat down in the rear of the fire, in front of the singers. He stepped up to her while the other woman was dancing, her hands raised and trembling. Four times the man went around the woman. Every time he stood behind her he raised his paddle as though he was going to strike her. The fourth time he really struck her and the paddle entered deeply into her shoulder and blood was seen to flow down. Now grease was poured into the fire, so that the house was lit up, and the woman arose and turned slowly, that everybody might see the paddle sticking in her

shoulder. The singers were beating time, and she sat down again. The paddle was pulled out, apparently with great difficulty. The shamans stepped up to her and cried "hōî, hōî, hōîfff," and blew upon her. Now the people began a song, during which the shamans continued to sing over her. Qe'ldētsem also put his hands on her head and chest and shoulders, crying "hōî, hōî, hōîfff." While this was going on, some of the women arose from their places and danced. Then the two shamans who had been working over her, raised her to her feet, and led her around the fire. The blood had ceased to flow, but a deep cut, beginning at the right breast and going across her shoulder far down the back, was clearly visible. Then all the people cried "hū," and she went out. Now a Nā'q'oaqtôq spoke, and blankets were distributed.

At 12.30 a new dance began. The girl who in the preceding dance had carried a knife came from behind the curtain and danced. A number of women danced in her honor, and the same old woman who had stayed in the doorway continued dancing there. One old woman was dancing, holding her pipe in her mouth. A song was sung, and then one of the Koskimo delivered another speech, holding a short staff in his hands. Whenever a name was called, he raised the staff high and held it so that the ends rested against his palms.

As the people became hungry by this time, a woman threw dried salmon among the people, first to the members of the secret society of the Koskimo, then to the others. When they were eating, the societies again uttered their calls.

Now a new dance was announced. A woman entered, wearing a flat ring, the front of which was set with feathers. She carried a bundle of red cedar bark in her hands. Her eyes and cheeks were painted black. When she was shaking the bundle of bark, it gave a rattling noise. The people gave her a pipe, a stick, and other things, and whatever she carried gave a rattling noise. The people took it from her again, but were unable to produce the same sound. Then they beat time again. She went once around the fire, looking upward and shaking her bundle of bark, and holding it as though she was going to throw it. Then she stood in the rear of the fire and sang her song. She gave her cedar bark to one of the messengers and took a staff in its place, which she carried around the fire and made it rattle; another person tried it, but it did not give a sound. Next she took a pipe of one of the Nā'q'oaqtôq and made it rattle in the same manner. Then she disappeared behind the curtain.[1] After some speeches, four young men went out, and several old people followed them, bringing food.

Then members of the Wā'tanem danced. After their dance more blankets were distributed. While the people were still eating, whistles imitating the raven's cry were heard outside. This was about 1.30 a. m. The speaker asked the people to beat time. Then the hā'mats'a entered

[1] See page 492.

with four assistants, who, however, had no rattles. Two women danced in his honor. During the second song a great many women were dancing for him. Two bloody lines were painted on each cheek, running in a wide circle downward from the corners of the mouth to the eyebrows. He came in, in a great state of excitement, and attacked his assistants, who were in front of him. After three songs he was led out of the house. This dance ended at 2 o'clock, and more blankets were distributed.

A new dance was announced, and a hā'mats'a entered, his face painted all black. A hemlock branch was fastened in front of his head ring. The front of his blanket was adorned with small white rings. QE'ldētsEm pointed out the blanket and said that it was the blanket of G·ē'xdEn. He danced four times. At his third dance he wore a blanket which showed the sī'siuL around its border. In the middle of the back was painted a squatting man whose palms were represented by carved wooden skulls which were sewed onto the blanket. The knees and the head were represented in the same way. One carved skull was also sewed onto the blanket on each side, outside the figures. He also wore a carved skull in front and one in the back of his cedar bark head ring. When he came in, five old hā'mats'as danced for him, while three stood in the door in order to prevent people from going out. Six songs were sung for him. During the first and second songs one woman was dancing for him. After his dances he was led out of the house. The speaker addressed the people, who beat time and said "hū."

Now the sound of whistles and the cries of a hā'mats'a were heard outside. The same hā'mats'a reentered, and danced one circuit and a half around the fire, while the women were dancing in his honor. His k·î'nqalaLala danced in front of him. When they stopped in the rear of the house, both squatted down, and their attendants stood around them. After the fourth dance they disappeared behind the curtain. Then more blankets were distributed.

At 3.15 women were heard singing outside. A man entered singing, followed by a woman. Two pairs of bloody lines were drawn on her cheeks, running downward in a wide circle from the mouth to the ear. She sang her secret song. She danced as t'ō'X'uît, trying to catch her supernatural power. As soon as she moved her hands upward, trying to catch it, the women began to dance in her honor. Now she caught it between her hands and threw it forward. At once a flying sī'siuL was seen in the rear of the house, moving rapidly to the right and to the left and trembling all the time. As soon as the sī'siuL disappeared again, all the dancing women put their palms together as though they had caught the supernatural power. Then blankets were distributed.

At 4 o'clock a woman came from behind the curtain, singing. She was followed by a ghost dancer, who had a large thick ring of cedar bark with an enormous horn in front, set with feathers, which were

waving to and fro on long shafts. It had a long trail behind. The speaker followed her. The people sang and women danced in her honor. She disappeared behind the curtain, and blankets were distributed again.

Now a song was heard outside. The speaker asked the singers to beat time. A man entered singing. His body was naked, but he wore a dancing apron and had cedar bark rings around his arms and wrists. He was a Bā'bakuaūLa, a t'ō'X'uît. After some speeches there was singing, and a woman and a man danced. They held their elbows close to their sides, stretched their hands forward, the palms upward, and moved the hands up and down in jerky motions. The Bā'bakuaūLa was then placed on a seat behind the fire in front of the singers and the speaker was asked to pierce him with his lance. The singers beat time, the speaker took up the lance and threw its point against the floor, to show that the lance was solid, and showed it around among the people. Then he took up the lance and walked around the Bā'bakuaūLa. After each circuit he put the point against the left side of Bā'bakuaūLa, and then continued his circuit. After he had gone around him four times, he once more put the lance against his left side and began to push it in. Apparently the point entered the body, blood was streaming out of his side, and as the point penetrated farther the Bā'bakuaūLa apparently collapsed. Finally the whole length of the lance had pierced the body and the point was seen to come out on the right side a little below the arm pit.[1] He was raised so that the people could see his body. Then the lance was pulled out again slowly. The shamans were called, and blew and sang over his body, while the singers continued their song. Then he was led behind the curtain. After this, cloths were distributed among the women; the singers beat time and cried "hū."

This was the last dance of the night. The Koskimo did not allow their guests to go home, but invited them to stay for a feast. The hā'mats'a still remained sitting in front of the door, preventing anyone from going out. They continued to eat and to make speeches until 10 o'clock, when everybody went home to take a rest.

On the 26th of November everything was quiet, as the people were exhausted by the preceding festivals.

In the afternoon of the 27th, the Kwakiutl held a secret meeting in order to determine what to do. The seal society was still confined to the dancing house. K·ēx·, whose mask had broken a few days ago during the dance, was going to initiate his son in atonement for this mishap. His elder son had died a few years before, after he had been made a member of the hā'mats'a society. Referring to this, he spoke

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[1]The Bā'bakuaūLa had a small hook attached to his right arm ring by means of which he pulled up the skin of his chest below the right arm pit, piercing at the same time a small bag filled with blood which was fastened to the skin, so that the blood was seen flowing down his side. This scene seems to be the same as that of the dance described on p. 575.

in the secret meeting about as follows: "Kwakiutl, give my son long life! Once I tried to make my son a hā'mats'a, but the deadly Bax-bakuālanuXsī'waē struck him and he died. When he died, I resolved not to make another child hā'mats'a, but now since the mask broke you all request me to initiate my younger son. I shall do so, but do give him long life." At this point Sī'witē, an old blind man, interrupted him, saying: "Don't be overbearing and don't let him have more than two songs," meaning that if he gave him four songs the boy should die. Then all the people scolded and blamed him on account of his merciless words. Now it was arranged what dances were to be shown and who was to pay for them. In the evening of this day, K·ēx·'s wife disappeared all of a sudden. Her clothing was found on the beach, and it was announced that she was to return as q'ō'minōqa on the following day. In the evening the Kwakiutl held their k·ik·î'lnala in order to bring back their novices. I will give only a brief description of their festival, as the details resemble that of the Koskimo. In the beginning the societies came in one after the other—first the killer whales, then the birds, etc. One man came in alone carrying a staff as though he was shooting with it, and crying "hū." The people sang when he came in. Then they tore blankets and distributed the strips. About 11 o'clock in the evening K·ēx· appeared carrying several spread tongs, while others followed him carrying staffs which they held stretched forward. They wore plain head rings. The spread tongs were given away. They designated gifts of canoes. At this time Lā'g·us delivered a speech. Now all had assembled except the members of the seal society. They came in last and stepped to the rear of the house, while Hō'LElitē made a speech.

Now began the dances. The fool dancers were heard outside, and they entered wearing masks and enormous noses. One of them had his face painted black and red. The people sang and the women danced. After this dance Hä'misilakᵘ gave away a gun and blanket. A man carrying a rattle was stationed in the doorway, and announced with his rattle the arrival of every new dancer. After every dance, blankets were distributed or other presents were made, but I shall not describe this every time. The distribution of blankets occupied by far the greater portion of the night.

The next dancer was an old woman, bent by age, who came in. Her face was painted red and black.

After a speech, made by Lā'g·us, a bear dancer came in. His face was all black. He wore an enormous head ring. Two men followed him and carried the blankets which were given away after his dance. As soon as these blankets were distributed, a young bear dancer appeared from the corner of the house and scratched the ground while the people were singing and women were dancing for him. Then he disappeared again.

About midnight a new fool dancer entered, led by a blanket which

was tied around his waist, and the people sang. After his circuit he disappeared behind the curtain. Hä′masaqa delivered a speech for him. He said: "The time of fighting has passed. The fool dancer represents the warriors, but we do not fight now with weapons; we fight with property." These words referred to the fact that the man whose place this dancer had taken had killed a chief of the Nanai′mo and many others. Then Hä′masaqa turned to the Koskimo and said: "It is not right that in your k·ik·î′lnala you distributed many blankets. It is not customary to do so, but now I will show you what we can do."[1]

Next a bear dancer entered, wearing a copper around his neck. He was followed by two men who carried blankets. Women danced for him. Now Ē′wanuXts'ē took the copper and spoke. He gave it to the Nā′q'oaqtôq. This copper had been given by a Nā′q'oaqtôq to his Kwakiutl wife. Now the Nā′q'oaqtôq had to redeem it by a payment of 700 blankets. In his speech Ē′wanuXts'ē held it by its lower end, thus indicating that he was going to take not more than half the price of the copper as payment in full. After this Lā′g·us, who was now standing in the doorway, delivered a speech. He said: "What is the matter with our house? It is shaking."[2]

Next another bear entered. Ho was caught by K·ēx· and led to the rear of the house while the people were singing. After a speech made by Hä′masaqa, another bear dancer entered, followed by a woman who carried a copper. Her mother danced, and during her dance a fool dancer was heard outside. Lā′g·us spoke, holding the copper. Then he gave it to Hō′LElitē, who replied. K·ēx· handed a number of bundles of sticks to Hō′LElitē, who spoke about them and distributed them. Then he returned the copper to Lā′g·us, who took it to a fool dancer.

About 1 o'clock another fool dancer entered, who was brought to the rear of the house by K·ēx·.

By this time a man carrying his baby appeared as fool dancer, coming from the rear corner of the house.

Next another fool dancer entered, and then a bear, who was led by a blanket which was tied around his waist. The man who led him wore a large neck ring of hemlock branches, which represented a copper that was to be given away for the bear dancer. A speech was made, and the ring was thrown into the fire.

At this moment the whistles of the hā′mats'a were heard. All of a sudden Yā′qoîs became excited and jumped down from his seat. His assistants and two k·î′nqalaLala rushed after him, and after he had danced around the fire once they all went out of the house.

At 2 a. m. another fool dancer wearing a large nose entered. After one circuit he ran out and came back without a mask while the people were singing.

Next a boy who was to be a pa′xala dancer was brought forward

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[1] Meaning that the Kwakiutl were going to distribute still more property.

[2] Meaning that the weight of the blankets which were piled up in it made it shake.

from the rear of the house. The man who carried him turned once in the rear of the house, and once in front. The boy was said to see something supernatural coming, and was carried out of the house.

After blankets were distributed the hā′mats'a reentered, the k·î′nqalaLala dancing before him.

Next a bear dancer entered, dressed in a complete bear skin, to which a mask was attached. The women danced for him, holding their hands close to the body, not raised, as is usually the case. After one circuit the bear left the house again.

About 3.30 a. m. two women entered, the first wearing a wide ring of cedar bark. The following dancer was a ha′mshamtsEs, who danced with short, quick steps without moving her body. She wore a head ring set with ermine, and a button blanket ornamented with a thunder bird and a killer whale. She had two heavy black lines running down her face, and two horizontal ones crossing them. She left the house after one circuit.

The next dancer was a girl, who was ushered in by her father. The people were singing and the girl's mother stepped up to her, encouraging her to dance, but as she could not induce the child to do so, she danced herself, wearing a red blanket. Now Hä′masaqa made a speech.

About 5 oclock in the morning two ha′mshamtsEs entered. They were followed by the hā′mats'a, accompanied by four assistants.

The next dancer was hai′alik·ilaL. She cried "sh, hōîp, hōîp." She wore a large ring of red cedar bark having four vertical horns, which extended downward in long tassels of bark. She had a large round neck ring. Her blanket was set with tassels made of red and white bark. Attached to the back part of her rings was a tie looking like a cross. The two messengers who stood at the door led her around the fire once. Then she went out again. After a short time she reentered.

At 5.15 a. m. a ha′mshamtsEs, wearing a round neck ring set with four tassels, danced. The two messengers led her around the fire, then she went out again. They returned and spoke to Hō′LElitē. After this the people beat time and the dancers disappeared.

At 5.30 a new dancer appeared, wearing hemlock branches around his head and neck. He danced with short, quick steps, and was led by the two messengers to the rear of the house. He wore a blue blanket and a dancing apron set with shells. He was the pa′xalalaL. He danced in the rear of the house without moving from his place; his whole body was shaking. Two songs were sung for him and the women danced. After a speech made by Hō′LElitē he left the house again.

The next dancer was a Ts'ō′nōqoa, who entered dressed in a bearskin, which was attached to her mask. She rubbed her eyes and shouted "ou, ou." Then the people sang, and she went out again.

A new song which was heard at the door, was taken up by the

singers in the rear of the house. A t'o'X'uît woman, wearing a head ring of hemlock branches, but no neck ring, appeared. She held her elbows to her sides, and her hands forward, palms upward. She raised them and lowered them alternately. The song was in a three-part rhythm, and she walked limping, one step being on the quarter mora of the rhythm, the second step on the half mora of the rhythm, while she was singing her secret song. After each line of her song the chorus continued it. She sang: "Yā, yā, yē."

Now Hō'LElitē stepped up to her and spoke. She replied with the exclamation "up, up," pointing to her chest, meaning that the people should split her. Then she moved her hands in the same way along her neck, meaning that they should cut off her head. Hō'LElitē proposed to throw her into the fire, but after some talk this idea was abandoned. The people beat time again. She began to dance, and caught her supernatural power between her palms. After she had done so twice, she said again "up, up," touching her stomach with her palms several times, meaning "take out my intestines." Then she tried again to catch her supernatural power, and during this time Hō'LElitē walked around her, shouting "up." Now she tried the fourth time to catch her supernatural power. At once whistles were heard. A bird was seen flying down from the roof, and a nō'nLEmg·ila figure arose from underground. The fourth time a feather, which represents the horn of the sī'siuL, came up from underground and moved trembling along the rear of the house. She went up to it, and all of a sudden she began to disappear in the ground. One man took hold of her, trying to rescue her, but his hands and forearms disappeared in the ground down to his elbows. Several men took hold of him in order to rescue him. Then he was apparently dragged through the whole house by the t'ō'X'uît, who had disappeared underground. He passed by circuitous movements through the whole house, plowing up the ground. Finally he seemed to lose the woman, and fell backward.[1]

After the t'ō'X'uît had disappeared in the ground, a second one commenced to dance. The underground motions of the first were led by the dancing woman, who, with the movements of her hands, tried to bring her up again. This second t'ō'X'uît was followed by one man. Finally she left the house, and blankets were distributed while Hō'LElitē delivered a speech. Now a song was heard on the beach outside

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[1]This performance had been prepared during the preceding days, when the members of the seal society kept everybody away from the house. A deep ditch had been dug in the rear of the house, in which the t'ō'X'uît disappeared. A shallow ditch had been dug all through the house. A heavy rope had been placed in this ditch, which was filled with loose dirt. The man who seemed to hold the t'ō'X'uît pulled himself along this rope. Unfortunately the rope had been laid too near the fireplace and was burnt. Thus it happened that the man had to let go. The original plan was to pursue the t'ō'X'uît to the front right corner of the house, where she was to appear again from out of another ditch which was connected with the ditch in the rear of the house where she had disappeared.

the house. A messenger ran around the fire, went out of the house, and returned.

Next Lā′g·us entered, holding a broken copper in his teeth. He was followed by a girl. Then one man entered who wore a neck ring. He had two companions who carried rattles. Another man carrying a copper plate, and two more men, followed. The people sang a hā′mats'a song. The girl wore a head ring with ermine trimmings and large abalone shells. She moved her hands like a hā′mats'a. She was clad in a button blanket with ermine trimmings. Now Lā′g·us broke off a piece of the copper and threw blankets into the fire. All this time her mother carried the rattle. The girl went out again.

Next Hō′LElitē took a rattle, turned, and went around the fire twice. Then he listened to see if the new hā′mats'a was coming back. He listened three times. Now whistles were heard, and the noise of a man running round the roof of the house. Suddenly the roof boards were pushed aside. A boy jumped down with a head ring of hemlock and quartz crystals attached along the median line of his head. He had an apron of hemlock branches. He jumped first upon the roof of the bedrooms in the rear of the house, and from there down to the floor. He danced, his hands close to the rear side of his thighs, running with short quick steps and bending rhythmically. Then he ran out. He was the Mā′tEm. As soon as he left the house the ha′mats'a cried "hāp." Nu′xnēmîs then made a speech. The whistles of the hā′mats'a were heard in the door, where the k·înqalaLala appeared singing. The assistants surrounded the hā′mats'a and ran with him around the fire. Then they went out. Now blankets were carried into the house, and the new hā′mats'a appeared naked, and danced. His kî′nqalaLala were singing and dancing before him. This ended the festival.

December 3.—The Kwakiutl gave the dance Walas'axa′. The people assembled in the evening in the dancing house of the Kwakiutl. A curtain was drawn right across the rear of the house, behind which the members of the seal society first disappeared. After one of the Koskimo had given away some blankets, a fool dancer came out at the rear right-hand corner of the curtain and danced around the fire. A few women danced for him. Then he disappeared again behind the curtain. Ē′wanuXts'ē and his speaker remained standing during this dance and the following ones, facing the curtain in front of which the singers were sitting. The next dancer was a bear, who also appeared from behind the curtain. Then the people sang and an old woman danced for him.

After some blankets had been distributed, a ha′mshamtsEs song was struck up, and a woman, accompanied by two assistants, appeared from behind the curtain. She wore the ha′mshamtsEs head ring and neck ring. The same old woman who had danced before and several others danced for her. Her movements were similar to those of the hā′mats'a, but she did not tremble. During the first line of the song

she raised her hands and danced in the same manner as the other women do. She disappeared, and after some speeches a new song was sung and she came out again with three assistants.

Now the Walas'axa', the dance of the clan G·ī'g·ilqam, commenced. Nu'xnēmîs and two messengers stood at the right-hand rear entrance of the curtain. He gave a signal for the singers to beat time and to sing, and out came a great many of the members of the Kwakiutl tribe, wearing wolf headdresses. They were about fifty in all, and as soon as they had stepped out from behind the curtain they turned around and began a procession around the fire. In front of the fire they turned again and continued their circuit. They held their fists in front of their bodies, the thumbs turned upward. While they were walking, they cried "yōu, hōu." After they had gone around the fire they disappeared again behind the left entrance of the curtain. Lā'g·us made a speech, and then they began a second circuit in the same manner as before. When they had made their fourth circuit, they stopped before entering the partition again. They kneeled around the fire, resting on their fists and knees. Now Nu'xnēmîs began a song, which was accompanied by rhythmical motions. They made another circuit and disappeared behind the curtain (Plate 36).

XI. Ceremonials of the other Tribes of Kwakiutl Lineage.

The winter dance of the Koskimo begins in the month of November. In the evening, before the ceremonies are to begin, a number of boys are sent out to gather kelp. They return during the night and enter the village at the south end, blowing on the tubes of kelp, and producing a noise like that of large horns. At the same time a drum is placed in the river so that the wooden band is in the water while the skin is held just above the surface. The beating of this drum produces a very loud sound. As soon as the young men have passed through the village, they stop blowing their kelp horns and the drum stops at the same time. Then all the people in the houses begin to sing their secret songs, and continue to sing until the morning, when they come out of the houses. Then the chiefs go from house to house and ask the people if they know what produced the noise of the preceding night. Some will reply that they did not hear it, others that they heard it, and still others that they had seen one of their dead relatives, who told them that he and the other ghosts came to take the son or the daughter of one of the inhabitants away. The chiefs continue to go from house to house until they come to that of the young man or young woman who is to be initiated during the following ceremonies. When they enter his room, they see that he has disappeared. Only his shirt and blanket remain. These are covered with blood. The chief seizes the garments, takes them out of the house, and calls all the people together, asking for the murderer of the youth. A great commotion ensues, all the people running about. At

last they begin to blacken their faces and take their weapons, ready to fight among themselves.

Now all of a sudden a person is heard to cry on the point of land at the west end of the village, "hamamamama." The people at once go to see who is there. Now the master of ceremonies of the winter dance, whose name is Amā'k, rises, and begins to call all the people by their winter names. The people are surprised at his doing so, and object. He, however, does not listen to them, and merely warns them not to be bitten by the Hā'maa. Then he calls four men whose names are Lōakwaxstaôk, WalkaLtsumt, Ā'Labala, and Henā'wa, and asks them to go in a canoe to the point of land where the sound was heard, in order to ascertain what produced it. The four men rise and enter the house, in which the hā'mats'a assemble at the same time. Soon they come out again, their faces blackened, rings of red cedar bark around their heads and around their necks, and paddles in their hands. The people inquire why they are dressed up in this manner, to which they reply that it is a protection against the lurking danger at the point of land to which they are going. They go down to a canoe and paddle slowly to the point of land. As soon as they approach it, the sound "hamamamama" is heard again. The men pretend to be scared, and paddle back to the beach. They ask some of the lōlō'LalaL, or ghost dancers, to go with them.

Then the master of ceremonies asks four of the lōlō'LalaL to accompany the four men. The lōlō'LalaL dress up and sit close together in the middle of the canoe while the four men are paddling toward the point. As soon as they approach it the same sound is heard. Then the men in the bow of the canoe paddle backward while the steersman paddles forward and brings the canoe up to the point of land. As soon as they touch the land the four lōlō'LalaL jump ashore and run into the woods, where they stay for a few minutes. Then they come back to the canoe and sit down in the same place as before. The other four men appear to be scared, but not a word is said. They paddle back to the village, and when they come to the shore, they inform the master of ceremonies that they shall not go back again, because they are too much scared. Upon a question of the master of ceremonies they say that they did not see anything, but that the sound scared them. He compels them to return and to investigate the cause of the noise. The lōlō'LalaL have stayed in the canoe all this time, waiting for the other four men to return. They paddle back to the point of land, and the four lōlō'LalaL jump ashore again and run into the woods, where they stay a few minutes. They come back, sit down in the middle of the canoe, and the four men paddle back again to the village. Now the four lōlō'LalaL jump ashore and go into the house of the father of the young man who had disappeared. The four paddlers rise and say that they have seen the missing youth among the ghosts at the point. The people all go into the house of the master of ceremonies

and take their seats. The master addresses them, asking them to get ready to fight the ghosts. He calls four yā'lakuēnôx (men who have secret songs), and bids them to stand in their places—that is, one in each corner of the house. Now the master of ceremonies takes a raven rattle and steps to the singer standing in the right-hand front corner of the house. He gives him the rattle and asks him to sing the ghost song: "Lo ho ho ho lo ho ho ho hē hama ma." When he has finished this song, the singer turns to the right, says "hamamamama," and returns the rattle to the master of ceremonies, who goes diagonally across the house to the left-hand rear corner. He gives the rattle to the man standing there, who repeats the same song, turns around, says "hamamamama," and returns the rattle to the master of ceremonies, who goes to the left-hand front corner of the house and repeats the same ceremony there. Last he goes across to the right-hand rear corner of the house and gives the rattle to the fourth singer, who repeats the same song, singing, however, louder and turning faster than the others. After this has been done, the four men sit down again. Now the master of ceremonies requests the people to get their ornaments of red cedar bark and to dress up. The people take them out from under their blankets and put them on. Then he asks the father of the novice to get some eagle down and to strew it on the heads of the people. After this has been done, he orders the lōlō'LalaL to assemble in one place in the house. He makes the hā'mats'a assemble in another place; the hai'alik·ilaL, pa'xalalaL, ya'yatalaL, na'naualaq, sē'ilîs, ts'ē'koîs, xoē'LxoēLawatala, hā'winalaL, lō'kwasōla (or lālaxsōla) all assemble.

Then he asks the people to prepare to fight the ghosts. All of them leave the house and go down to the canoes, each society in a canoe by themselves. Only the hā'mats'a and the hē'lig·a stay ashore. They paddle toward the point where the cry of the ghosts was heard, and as soon as they reach there, they hear again somebody calling "hamamamama." The people look frightened. Some jump into the water, others faint, and all pretend not to know what they are doing. Only the canoe in which the lōlō'LalaL are assembled goes on undisturbed. They go ashore and take the novice, who had disappeared, from among the ghosts. They bring him down to their canoe and paddle slowly back toward the village. During this time all the other canoes are drifting with the tide, as the people have not recovered from their fright. As soon as the lōlō'LalaL land, the hā'mats'as, who are expecting them, begin to get excited and run down to the beach. Then the master of ceremonies orders a man, whose name is LāliLqōtsastala, to bring the other canoes back. He takes a small canoe, paddles out toward the canoes, and brings them back one by one. As soon as they land, the lōlō'LalaL go down and carry the people up to the house as though they were dead. Then the lōlō'LalaL shamans try to restore them to life, while at the same time the hā'mats'as are running from house to house excited, driving the people out as soon as they have

been restored by the efforts of the shamans. This continues until the mā′maq'a rises and sings his song, dancing around the fire. He is considered more powerful than the hā′mats'a, and by his song compels him to leave the house.

Then all the people go to their houses and have their breakfast. In the evening the yē′wix·ila invites the tribe to his house. Then they begin to sing the song of the ghosts, as follows: "Lo ho ho ū, lo ho ho ū, lō ho ho a hu omama." This song is repeated four times. As soon as they stop, the master of ceremonies addresses the people, saying that they will try to restore the youth who had been taken away by the ghosts. While he is talking, somebody is heard to cry "hamamamama" outside the house. They look about as though they were frightened, and ask each other what may be the cause of the noise. The sound is heard four times; then an old man jumps into the door and informs the people that the lōlō′LalaL are approaching, and requests the people to have their batons ready to beat time. As soon as he has finished speaking, the door opens and the lōlō′LalaL enter crying "hamamamama." The people repeat the cry and begin to beat time. The ghost dancers enter and dance in a stooping position. They wear rings of cedar bark on their heads, from which a veil of split white bark is hanging down over their faces. They go around the fire until they come to the left-hand corner of the house. Here they sit down in a circle crying again "hamamamama." When they become silent, the master of ceremonies asks LĀ′liLqōtsastala to see if the ghosts have come with the dancers. As soon as he approaches them, they begin to cry again "hamamamama," but he does not stop. He steps up to them, sits down among them and looks for the ghosts. After a short while, he returns to the master of ceremonies and says that he has seen some of his dead relatives in a hole in the ground, and that the lōlō′LalaL were sitting around the hole and talking to the ghosts. He asks the master of ceremonies for a strong rope. The latter calls a man whose name is Tsakstâ′laqoals to get the rope which his grandfather left him. This means that this office is hereditary. Tsakstâ′laqoals goes and brings the rope into the house. He also brings twenty blankets, which are called the weight of the rope of the ghosts. The master of ceremonies gives one end of the rope to one of the lōlō′LalaL. The latter pretends to tie the end of the rope around the waist of the new lōlō′LalaL in order to prevent his being taken away by the ghosts.

As soon as this is done, the tribe divide into two groups, the clan of the yē′wix·ila and their rivals. The latter sit close to the door. Then the master of ceremonies gives the twenty blankets to the rivals. After this he calls up all the bā′akwas—i. e., those who belong to the clan of the yē′wix·ila. As soon as they take hold of the rope, the yē′wix·ila distributes blankets among his rival clan. Then he calls upon the people of his clan to touch the rope. They come one after the other and distribute blankets among the other clan. Last of all the

chief comes, who gives away twenty blankets. The blankets which are given away are supposed to be a weight attached to the rope, and the last gift of twenty blankets breaks the rope.

Then one of the members of the rival clan jumps up. He takes hold of the broken rope, and while he is holding it calls the chief of his own clan to fetch the rope which he inherited from his grandfather. The chief returns with the rope and twenty blankets. He ties the two broken ends together with his rope and says that he will be able to bring the ghost out of the ground. He calls his clan to leave the door and to come to the rear of the house. Now the yē′wix·ila's clan take their seat near the door. The other clan goes through the same ceremony, and last of all the chief brings forty blankets, which cause the rope to break. This means that the clan whose rope did not break until forty blankets were attached to it is more powerful than the other one. After the rope breaks, the whole tribe sings as follows:[1]

Look up to our world, look up to our world! Chief! Procurer of wealth!

This song is repeated four times. The yē′wix·ila distributes more blankets among the people, who then go home. On the following day the lōlō′LalaL are seen to walk about the village with rough rings of cedar bark on their heads, the latter being strewn with down, and their faces blackened. About midnight of this day a number of men secretly climb the roofs of the houses of the village and begin to whirl the whirring sticks"[2] (fig. 189). The noise of these sticks is supposed to be the voice of Hai′aLilaqas or Wīnā′lag·ilîs, who comes to take away another novice. This noise is repeated four times, each time for about ten minutes. Then the people must sing their secret songs in the houses. When the noise stops, a hā′mats'a is heard to shout in the bush, and on the next morning a blanket is found in front of one of the houses. The people gather around it and try to discover whose blanket it is. After they have ascertained the owner of the blanket, they say, "It was certainly he whom we heard in the woods," and his father adds that Hai′aLilaqas probably came and has taken his son to BaxbakuālanuXsī′waē. The people request him to clean his house and prepare for the return of the novice. The man goes into his house at once, cleans it, and as soon as he is ready, the people enter. He asks them to be ready for the return of the hā′mats'a, as he might come back unexpectedly. The master of ceremonies asks the singing master to sing the new songs for the hā′mats'a, of which there are four. After the singing master has sung these songs, the master of ceremonies requests the new yē′wix·ila to prepare a feast. The people take their places and begin to sing the four songs of the old hā′mats'a. After these are sung, the feast is spread. When the people have entered, the old hā′mats'a comes out of his room and drives them out of the house

[1] Appendix, page 728.

[2] These are used for the hā′mats'a, mā′maq'a, hai′alik·ala, t'ō′X'uît, and hā′winalaL. The kelp trumpets are used for the lōlo′LalaL only.

and into the water, where he keeps them until the mā′maq'a appears and drives the hā′mats'a back into the house.

During these days the second yē′wix·ila is collecting all the debts which are due him, and on the following morning the new hā′mats'a is seen on the same point of land where the first one was recovered. The people go up to him, catch him, and bring him to the singing house (kekoalela′tsē). Then they all begin to sing the four new songs, the first two accompanied by fast beating, the last two by slow beating. After these songs the hā′mats'a is led back into his bedroom. About 8 o'clock in the evening he leaves the house, returns to the woods, and stays there until his father has invited all the people to his house to sing for him. As soon as they are assembled they begin to beat time. After they have done so for about five minutes, one man cries "yaū." The people repeat this cry four times. They have hardly done so when the hā′mats'a enters and they begin to sing. The hā′mats'a dances around the fire and at the end of the last song disappears in his bedroom. This night all the dances are shown in a festival similar to the k·ik·ī′lnala of the Kwakiutl.[1]

On the following morning the yē′wix·ila invites all the people to his house, and gives a feast to the men, women, and children. At the end of the feast everybody receives a blanket "to wipe the mouth with." After this the hā′mats'a is allowed to bite four times, once every fourth day. During this time he is purified in a way similar to that of the hā′mats'a of the Kwakiutl.

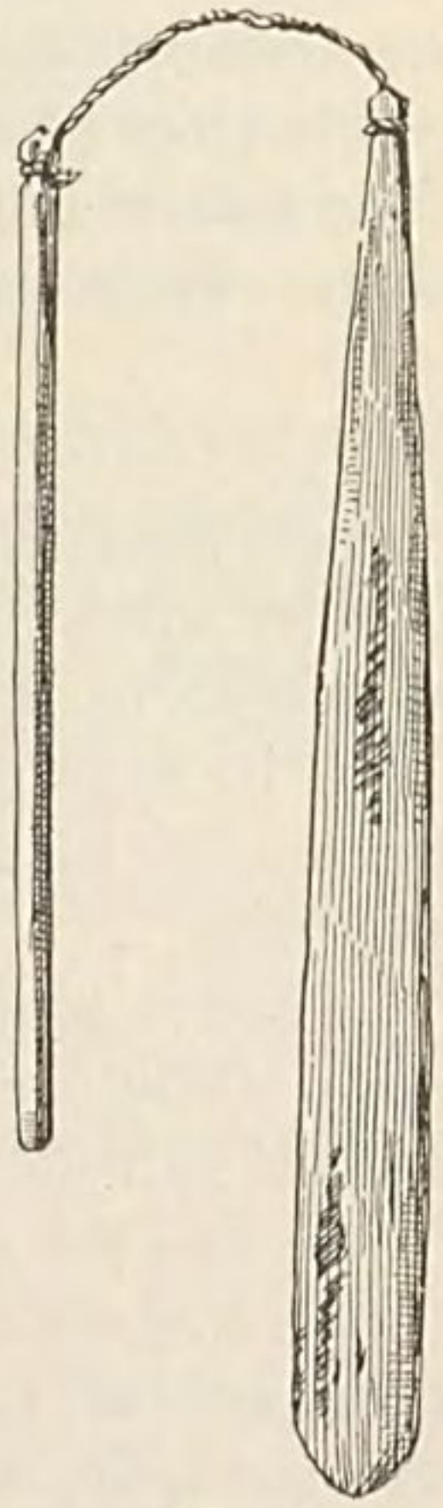

Fig. 189.

KOSKIMO WHIRRING STICK.

Length, 23½ inches.

IV A, No. 1488, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

After the last night of the winter dance, the yē′·wix·ila calls all the people to his house and asks them who is willing to keep the red cedar bark until the next year. No one responds. All of a sudden the door is opened and about twenty men rush into the house. They are covered with balsam pine branches, and blood is dripping from their bodies. They are called the Wīnā′·lag·ilîs or qumqu′mx·dē (land otters). They run around the fire and suddenly take the cedar bark rings from the heads of several men. They then leave the house again as suddenly as they entered. The men whose cedar bark rings they have taken will give a winter dance the following year. After this, the rest of the people take off their cedar bark ornaments, tie handkerchiefs around their heads, and begin to sing summer songs.

The following is a description of the ceremonies corresponding to the kuē′xalakᵘ of the Kwakiutl, called by the La′Lasiqoala, Lē′xalakᵘ.

[1] See page 595.

During a feast the young man who is to be initiated suddenly faints. At once a number of newly initiated shamans are called to investigate the cause of his sickness. They are unable to ascertain what ails the young man, and send for the older shamans. They feel all over the body of the youth, and finally declare that the spirit Wīnā′lag·ilîs has taken possession of him. Then a sail is stretched across the rear of the house and the patient is placed behind it. The house is cleaned, and everybody is invited—men, women, and children. Henceforth this house will be the dancing house. The q'ā′qanas, who correspond to the mē′êmqoat of the Kwakiutl, must stay in this house after they have once entered it until the end of the whole ceremonial. The profane are not allowed to pass the front of the house above high-water mark.

The master of ceremonies asks the people to sing the following song, which is supposed to have the power of restoring the patient to life:

Hayas âhōnô lalä ya honô hanä häu.
Do not cry, you will come back safely.[1]

An old shaman stands by the patient, feeling his body. The song has no effect upon the young man, and the master of ceremonies requests the people to try another means of restoring him to life. Boxes are placed in front of all the assembled people, and at a signal they beat time rapidly with their batons, ending with a loud rap. This is repeated four times.

The above song belongs to the clan Naa′nqaēnôx (always staying at home), while the beating of time belongs to the clan La′lauiLEla, who obtained it from the Awī′k·'ēnôx. The shaman says that the beating of time had the desired effect upon the patient. After this the people assume their winter names and rearrange themselves in groups as enumerated on page 419.

On the same night the festival called qap'ē′kᵘ is celebrated. In the morning of this day a number of young men were sent out to collect alder bark and to make red cedar bark, which is distributed among the people in the evening. In payment for their services they receive a special allotment of food. When the people assemble for the qap'ē′kᵘ, the highest hā′mats'a is first led to his seat. The other hā′mats'as are placed at his side. They are followed by the ts'ē′koîs and by the hai′alik·alaL. The quē′qutsa take their seats last. They sit on each side near the door. As many quē′qutsa as there are hā′mats'as are charged with the making of the head rings of the latter. These quē′-qutsa all stand on the right-hand side of the door, each holding his ring. They have a leader, whose office is hereditary. They walk around the fire four times, singing. Then they step in front of the hā′mats'as, and on a signal they all put the neck rings around them. At a second signal they put the head rings on the heads of the hā′mats'as, and finally they strew their heads with down. Then the hā′mats'a's whistle is heard, and the people distribute quickly the red cedar bark

[1] Appendix, page 728.

among the others. The quē′qutsa blacken their faces. The hā′mats'a begins to get excited and bites the people. He must bite a certain man first, whose duty it is to offer himself to the hā′mats'a when he gets excited for the first time. This office or duty is hereditary. The hā′mats'a carries a stick and drives the people around the fire. During the ensuing excitement another novice disappears, leaving his blood-covered blanket behind. It is found, and under great excitement inquiries are made as to who is missing, until finally the father exclaims that his child has disappeared. Then the ha′mshamtsEs dances.

Sometimes the disappearance of the novice takes place in a different way. Four men go on the roof of the house during the night and, running about, cry "hm hm hm." This noise is taken by the people to signify the approach of Wīnā′lag·ilîs. On the following morning it is found that one of the young men has disappeared, leaving his blanket behind, which is covered with blood.

Still another way of beginning the Lē′xalakᵘ is the following: The mā′maq'a dances in his house, and suddenly throws his magic stick, which is believed to fly through the walls of the house and to hit the person who is to be initiated and who lives in another house. The youth falls down, and then the parents call the shaman to cure him. The ceremony continues as described above.

To return to the festival. After the ha′mshamtsEs has finished his dance and has bitten a person, the people begin eating. They do not feed the hā′mats'a first, as is done by the Kwakiutl. Then they sing four times the song of the Naa′nqaēnôx;[1] three times they sing the burden only, the fourth time they sing the words:

Do not cry, you will come back safely.

This is the end of the ceremonies of the first night. On the second and third night the same songs are repeated. Every night the shaman visits the novice, who is hidden behind the curtain. He reports that he is feeling better, and the third night he says that he is shaking violently.

The fourth night the same songs are repeated. The shaman visits the novice again, and when he returns, he says, "Listen; he is singing his secret song." Now nobody is allowed to speak or to cough. Then they hear, as though from a great distance, the sound of a new song, which is growing louder and louder. The secret song is sung four times. The singing master must listen attentively, because after the fourth time he must repeat it. Two new songs are heard that night. On the following night the same ceremony is repeated, and two more songs are learned by the people. Twelve quē′qutsa women dance this night. Their faces are blackened and they wear red cedar bark. Their dance is accompanied by the beating of batons. One man and one woman are stationed at the entrance to the secret room in which the novice is lying, in order to watch it. Their offices are hereditary.

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[1] See page 612.

When the twelve women are about to finish their dance, the novice is seen to come out of his secret room. He does not wear any ornaments of red cedar bark.

He dances on the four following nights. On the following day there is an intermission of the ceremonies. The next day the yē′wix·ila invites all the people to his house and asks them to prepare for the purification of the novice, which will take place on the fourth day. He also requests three officers whose offices are hereditary to prepare themselves for this ceremony. These officers are the man who makes the tongs, his name is Q'aqiâ′s; the one who uses the tongs, his name is NE′msqEmg·ala; and the one who calls the people to the washing. Early in the morning of the fourth day the last-named officer must go to every house, and, beating the doors with his baton, he must cry, "Yau, yau, listen, listen. There is food for you from (Qoā′yukolax·ilîs), from (ʟā′xus'EmL)."[1] The first is the q'ā′q'anas name, the second the quē′qutsa name, of the novice. In the evening all the people assemble in the dancing house. Then the first of these men makes a pair of tongs, which are wound with red and white cedar bark and put up on the west side of the house. A ladder which has only four steps is placed against one of the rafters on the left-hand side of the fire (that is, to the left when facing the rear of the house). The man who made the ladder climbs it, and puts his head through the roof. When he comes down, the people beat the boards and the drum. At midnight he ascends the ladder again. He goes up a third time between midnight and dawn, and the fourth time when the day begins to dawn. This is to secure good weather. Every time when he comes back, he sings:

Ha, ha! you do not give me a favorable answer, you who are to bring the southeast wind by washing our novice.[2]

The officer who made the ladder is given a dish in payment for his work. The one who made the tongs receives a knife and a hammer. The one who carries the tongs receives a belt; another belt is given to the officer who invited the people. Sometimes paddles, canoes, or blankets are given to them, but these are always called dish, knife, or belt, as the case may be.

After the man has come down the ladder the fourth time, NE′msqEmg·ala takes the tongs down and goes around the fire four times, holding the tongs stretched forward. He calls a man to open the door, and strikes the stick which is spreading the tongs four times. The fourth time he hits it so that it flies out of the door. Then he takes two stones out of the fire, one after the other, repeating the motion three times in each case before actually taking them up. He throws them into the water in the same way, and dips them up also after having repeated the motion

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[1] Yau, yau, yauxtaxoLai′ yauxtaxoLai′, hamāyiLaai qa (Qoā′yūkōlax·ilisa:′) LE (ʟāxus'EmLai′).

[2] Appendix, page 729.

three times, really dipping up the water the fourth time. The novice sits right next to the bucket in which the water is kept. He has no rings of red cedar bark. Then he is washed.

Then NE'msqEmg·ala places the tongs vertically into the fire, the open end downward. The cedar bark with which they are wound catches fire, and then he lets them go. It is expected that the wind will blow in whichever direction they fall. Then the officer who made the tongs makes head rings of red cedar bark for all the people, who put them on. The singing master makes a new song, and singing it they go around the fire, and leave the house, led by the yiai'atalaL, who carries a small rattle. This office is also hereditary. They go through the whole village, and inform the people that the purification of the novice has been performed that morning. The people put their masks in order, and gather the property which they are going to give away at the festival which is to be held that evening. This night the people are not arranged according to the groups described above, but according to their clans. In the morning a man is sent around to call the people. He says, "Let us go into the house and beat the boards, for we have purified him. Let us go at once."[1]

First the boys enter the house and begin to beat time. Then the various groups enter one after the other, each carrying the property which they are going to give away during the festival. Whenever a group enters, the boys beat time. They imitate the movements of the animals which they represent. Then each group gives presents to the others, and at this time the hā'mats'a, mā'maq'a, and the other q'ā'q'anas, pay for the damage they have done. Next, three men are called up,—ME'lxmEk^{u}, a Naqô'mg·ilisala; Ts'E'lē, a G·ē'xsEm; and Tsau'xstâlag·îlis, a G·ī'g·îlqam,—who each sing a song, accompanied by the people. ME'lxmEk^{u}'s song is as follows:[2]

I will listen to the old tale to which this refers.
I will listen to what is told about it.

After they have finished their songs, a man named Wīyō'tsEm is called up. He puts on a canoe sail like a blanket, and goes around the fire dragging the sail behind him. This means that he is sweeping the house for the dancers, who will enter next. The first dancer to enter is the wā'tanEm. He is followed by the ghost dancer, the ō'lala, hai'alik·auē, ts'e'koîs, wī'x·sâ hā'mats'a (=hamtsEtsōē), and hā'mats'a.

While the hā'mats'a is biting the people, the mā'maq'a enters and drives the hā'mats'a away. Then the new dancer comes out of his secret room. If he has a mask, he returns to his secret room and dances again. Four women dance with him, two in each corner in the rear of

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[1] La mEns lāg·aaLtsâLai', g·îns kuēxalēLg·ai', xg·îns kuēsasōxtEg·ai'. Halag·i-
We will go in, we will beat boards, for we have washed him. We will
liLEnsai'! nā'Xua Laa'mLEnsai'!
go at once all we will go!

[2] Appendix, page 729.

the house, while the novice is dancing in the middle of the rear of the house. The dance is accompanied by two new songs and by the two songs that were used at the ceremonial of purification. While he is dancing, the yē′wix·ila distributes his presents among the people. On the following day another man gives a feast in the house of the yē′wix·ila. When all the people have entered the house, the novice is called to come out of his secret room. The people sing one song, and he dances alone and sits down. Again his father distributes presents among the other clans. The novice is allowed to take part in the feast. During the four following days the novice wears head rings of red cedar bark. After four days, another man gives a feast in the same house. When all have entered, the novice is called out of his secret room. He wears a smaller head ring now. Two more feasts are given in the same way at intervals of four days. Every time the dancer wears a smaller head ring.

At the end of the last night the q'ā′q'anas, who have stayed in the dancing house right through the whole ceremonial, are led home by their wives.

It will be noticed that in these ceremonials the festival corresponding to the k·ik·î′lnala of the Kwakiutl is celebrated after the return of the novice. Among the La′Lasiqoala when the novice has disappeared in the woods (being a lā′xsâ), his whistles are suddenly heard on the roof of the house or behind the houses. At night, while the people are assembled, he is heard on the roof of the house, but disappears again. On the following morning he is seen on a point of land. Four canoes are lashed together and connected by planks. Thus the people paddle up to him and bring him back. The same night all the dances are performed.

The winter dance ceremonies of the Ts'ā′watEēnôx differ from those described heretofore. I have received from Mr. Hunt detailed information only in regard to the closing ceremonies, while the progress of the ceremonial seems to be much like that of the Kwakiutl. The beginning is as follows:

The yē′wix·ila invites all the people to his house, where they sit down according to their clans. Then he asks his wife to bring food. While the food is being prepared, the people sing. In the middle of the third song the whistles are heard on the roof of the house. The people stop singing. They group themselves at once according to their dances and societies. They burn the salmon, because it was prepared before the beginning of the winter dance. That night they begin their ceremonies.

On March 14, 1895, they concluded their ceremonies as follows:

Pa′xalats'ē, chief of the T'Ena′xtax, gave away blankets during the winter ceremonial. At night two men went into every house, and said at the door: "Now we will tame your dancer, Ts'a′mqoagaLē. Now

we will tame your dancer, Na′nts'ē. Now we will see the dance of Laqoasalag·ilîs. Now we will see the dance of Yakamansa′lag·ilîs."

Then the otner one said, "Be quick now, dancers! We will assemble, friends, while it is day," and they went back to the dancing house.

After some time the two men went again to every house, and the first one said: "We come back to call you." The second one said: "Now let us go to the house, dancers. It is late in the evening. We have no fuel, friends. Let us all go together." Thus they said at every house, and went back to the dancing house.

Then the two men went again and looked about in the house and said: "Now all our friends are in;" and when they discovered that some one was missing they went to him and said: "You are the only one who is still missing."

When they were all in, Pa′xalats'ē arose and spoke: "I thank you, my great friends, that you have come to our dancing house. Remain here in the dancing house of ƓA′mtalaL, the great shaman, who vanquished our Master, Q'aniqilakᵘ, at Ts'ā′watē. This is the winter dancing house of Nau′alagumqa, the great shaman at Ts'ā′watē. This is the winter dancing house of Bā′Lalag·ilakᵘ, who gained victory over Wē′qaē of the Lē′kwiltôq (see p. 416). Those whom I named had large cedar bark ornaments. Thus we say, La′ngal; thus we say, Nu′xnēmîs. Therefore I gain the victory over the chiefs of all the tribes, for in the beginning they were vanquished by ƓA′mtalaL and Nau′alagumqa and BaLā′lag·ilakᵘ. Now take care, my friends!" He turned to his tribe and said to them, "I say so, Tā′mXuak·as; I say so, Xū′gamsila; I say so, P'a′lxalasqam; I say so, Lē′na; I say so, my friends. Now take care, my great friends; give me my rattle that I may call the spirit of the ceremonial. Therefore I tell you to be careful, friends." They gave him the rattle; he shook it and sang "hoîp, ôp, ôp, ôp." He stopped and looked upward as though he was expecting the spirit. The chiefs said: "Take care, friend, else you might not get the spirit of the winter ceremonial." Again he shook his rattle and sang the secret song of Ts'awatā′lalîs:

1. Now listen! ya, ya, ya, greatest of all dancers! Hawō.
2. Now sing! ya, ya, ya, greatest of all dancers! Hawō.
3. Now sing your song, ya, ya, ya, greatest of all dancers! Hawō.
4. Now he comes to me, ya, ya, ya, greatest of all dancers! Hawō.

Then he ended his song, and the cries of many hā′mats'as were heard among the trees. They cried "wîp, wîp, wîp, wîp," like the ha′mshamtsEs.

As soon as the cries ceased, Tā′mXuak·as spoke: "Friends on the other side of the house, did you hear what we obtained from our grandfathers? You heard that it belongs to the earliest legends of the world. Now take care, friends, we do not need to be frightened of anything, because, as you heard, my great cedar bark ring came to me from my grandfather." Then Pa′xalats'ē shook his rattle again and

sang the same song as before. When he stopped singing, the cry of the ha′mshamtsEs was heard again near the house.

Now Pa′xalats'ē shook his rattle again and sang his secret song. When he stopped, the cry "wîp, wîp, wîp" was heard just behind the dancing house. He sang his secret song a fourth time. Then the cry "wîp, wîp, wîp" was heard at the door of the house. The first of the dancers entered and sang his secret song. They were all dressed in hemlock branches, which were wound around their heads and necks. This is the secret song of their leader:

1. Now listen, anā′ anā′ to my shaman's song. Anā′, anā′ hamāmamā, hamāmamā′.
2. Now listen to the cry of the hā′mat'sa, because I am a cannibal, because I am a shaman, anā, anā, hamāmamā, hamāmamā, hamāmamā.

Then the leader, Ts'ē′koa by name, stopped singing. When he came near the fire, to the middle of the house, he turned, and at the same time said "hoî′p, hoi′p, hoî′p." Thus forty men came into the house, while the old men who were sitting in the rear of the house began to beat time. They went around the fire in a squatting position. Next, a woman came. Her name was Yā′kusElag·ilîs. She had hemlock branches around her neck. She sang the secret song of Nau′alagumqa:

1. Hamā! I was made a magician by the greatest of the dancers.
2. Hamā! I was filled with magic by the greatest of the dancers.

When she stopped singing, she turned and all cried "wîp, wîp, wîp." Forty women were standing in the house. The old men began to sing the song of ƓaL′mtalaL, which he sang in his contest with Qā′niqilakᵘ at Ts'ā′watē, according to the tradition, when he gained the victory over Qā′niqilakᵘ, at the time when they tried each other. This is the song which he made against Qā′niqilakᵘ:

1. A small magician was he as compared to me.
2. The small magician was afraid of me.
3. I called his name, the name of the small magician.
4. And he tried to tame this greatest of all dancers.

When she stopped singing, Ts'ē′koa repeated his secret song. After this song all the men and women turned to the left and cried "wîp, wîp, wîp." Then the old men repeated ƓaL′mtalaL's song. When they stopped, Ts'ē′koa repeated the song of Bā′Lālagᐧilak, the same which he had sung when entering the house. When he had finished his song, all the men and women turned to the left and said "hōî′p, wîp, wip, wîp." Once more the old men sang the song of ƓaL′mtalaL. After their song, Ts'ē′koa repeated Bā′Lalagᐧilakᵘ's song. All the men turned to the left. The old men repeated the song which ƓaL′mtalaL sang in his contest with Qā′niqilakᵘ.

Then all the men and women who had danced went out of the house, and Ta′mXuakᐧas spoke: "Wā, wā, friends. Did you see this? What you have seen, friends, on the other side of the house, that is what we are afraid of; that is what makes life short; that is our Lord; that

is what we inherited from our grandfathers; that is our history; that is the great magician; that is ƛa′mtalaL, the great magician; the woman is Nau′alagumqa. That is Bā′Lalag·ilakᵘ; that is ƛa′mtalaL, who gained the victory over Qā′niqilakᵘ at Ts'ā′watē, and that is the cause why all the tribes are vanquished by us, wā, wā. That is what I say, friends, for Pā′xalats'ē. The songs which you have heard are those of ƛa′mtalaL. That is his dance. The secret song of the leader is the secret song of Bā′Lalag·ilakᵘ, and the secret song of the woman is that of Nau′alagumqa. I do not use new ways. The other tribes may invent new things, wā, wā."

Now the boards of the house front were struck, and the people said: "The cormorants are going to dive!" Then Xū′gamsila entered the house and said: "Beat the boards, friends." The old men beat the boards, and the young chiefs entered. As soon as they had come in, Xū′gamsila spoke: "These are the cormorants of Ts'ā′watē. That is the only place where they eat nothing but oulachon. Therefore they are fat.[1] Now beat the boards, friends." The old men beat the boards, and the women came in, spreading their blankets. They had red cedar bark ornaments on their heads, the same as the men. Then Xū′gamsila spoke: "They are the sawbill ducks; they dive for property." Now Ta′mXuak·as spoke: "Friends, what do you think? Shall we discard the use of the red cedar bark which makes us happy? We shall only be downhearted if we should discard it. We shall be asleep all the time. Now, friends, we will finish this night. We will have the last dance of this season. You, Pa′xalats'ē, shall change our names this night. That is what I say, P'alxalasqEm.

Now Hō′LElitē arose and spoke: "This is your speech, Ta′mXuak·as. You said we would finish this night. Did you hear the speech of our friend La′mg·ala? He says they will take off the red cedar bark. I will not take it off. That is what I say, KuLE′m; that is what I say, Ts'a′lgaxsta. I must accept the words of all our friends."

Then arose Yu′x·yukwamas, chief of the Nimkish: "These are your speeches, friends. You wish to throw away the red cedar bark. Now answer my speech, Ta′mXuak·as."

Then the latter answered: "It is true. I said so because our friends here do not treat in the right way the cedar bark of which we are afraid, which we inherited from our grandfathers. It is our master, it makes our life short. It is true I said we would finish to-night."

Then Yu′x·yukwamas spoke again: "Did you hear, friends? Did you hear it, Lā′qoasqEm? Let them finish now. You finish to-night. But I am waiting for the repayment of the marriage money to my friends. Therefore I do not want to take off the cedar bark to-night. You may change your names to-night, wā, wā. I say this, Nu′xnēmîs; I say this, Hō′LElitē; I say this, La′mg·ala; wā. It is a great thing that

[1] That means that they had each given a grease feast.

we are talking about, my tribe." Then Nu'xnēmîs arose and spoke: "That is your speech, Ta'mXuak·as; we are all afraid of your speech, great tribe! It is better that you finish to-night. Keep on in the old ways of our grandfathers! I thank you, great tribe, keep on in this way, my children! Do not abuse what we inherited from our grandfathers. Your words are true. This cedar bark will make life short if it is not used in the right way. Now take care, friends! I say this, Kwakiutl, Ma'malēleqala, Nimkish, Ts'a'mas." Then all the chiefs said "wā, wā."

Now Ta'mXuak·as arose again and spoke: "Thank you, friends, for your words. Now I will take off the red cedar bark to-night. Come, friends, and you women, and let us dance. Let the tribes listen to us and watch our customs." Then the men and the women assembled and sang the old song. Xū'gamsila carried a long notched pole about 7 feet long. This is his song:

1. Now dance! take off by means of your dance the great head ornament, the head ornament that you inherited from the mask of the winter ceremonial worn by the first of our tribe. Wō, ō, ō, ō, ō, hūwaia, hūwaia, wō, ō, ō, ō, ō. (Here all the people lifted their cedar bark ornaments.)
2. O let us now put away our great head ornaments. The head ornament that you inherited from the mask of the winter ceremonial worn by the first of our tribe. Wō, ō, ō, ō, ō, hūwaia, hūwaia, wō, ō, ō, ō, ō. (Here the people lifted the head ornaments again.)
3. O let us now put down our great head ornaments, the head ornaments that you inherited from the mask of the winter ceremonial worn by the first of our tribe. Wō, ō, ō, ō, hūwaia, hūwaia, wō, ō, ō, ō. (Here they lifted the ornaments again.)
4. O now dance and take off this our great head ornament, the head ornament that you inherited from the mask of the winter ceremonial worn by the first of our tribe. Wō, ō, ō, ō, hūwaia, hūwaia, wō, ō, ō, ō.

With this they lifted the ornaments again and put them in the notch of the staff which Xū'gamsila was carrying. The song is the same as the one which ƛa'mtalaL used when taking off his cedar bark ornaments. As soon as they had finished their song, they changed their names. Now he whose name had been Xū'gamsila was called Ha'mts'it. Then NEg·ē', whose name had been Pa'xalats'ē, spoke: "My tribe, now let some one rise who wants to take these red cedar bark ornaments for next winter."

Then Yā'qōLas arose and spoke: "I come, NEg·ē', in answer to your speech. I will take this red cedar bark." Then he spread his blanket, the cedar bark ornaments were thrown into it, and he hid them in his bedroom. Then all the members of the T'Ena'xtax tribe tied handkerchiefs around their heads. They had finished their winter dance. Walas NEg·ē' distributed blankets. They did not give first to the hā'mats'a, but to the head chief.

XII. The laō'laxa.

I pointed out at a former place that the La'Lasiqoala group the dances in two classes—the ts'ē'ts'aēqa and the nō'nLEm. The nō'nLEm dances are closely connected with the clans, and during their performance the ordinary social system remains in full force. The Kwakiutl have only a few of these dances which they call Laō'laxa, which name is also sometimes used by the La'Lasiqoala. It is difficult to establish any fundamental difference between a Laō'laxa dance and a ts'ē'ts'aēqa dance, as in both cases a hereditary genius initiates the novice, and as in both ceremonials membership is obtained in the same manner—through marriage, or by killing a person who is entitled to the ceremonial. The distinction is comparatively clear among the La'Lasiqoala and the affiliated tribes. Only those dances which derive their origin from BaxbakuālanuXsī'waē and his following, or from Wīnā'lag·ilîs, are ts'ē'ts'aēqa; all others are nō'nLEm. To this class belong all the animals, and we find that they are much more clearly clan deities than the former class. At the same time it is stated distinctly that the whole ceremonial was introduced through intermarriage with the northern tribes, particularly the Hē'iltsuq. This consciousness of an entirely foreign origin of all the Laō'laxa dances is still stronger among the Kwakiutl, while many dances which undoubtedly had the same origin have been incorporated by them in the ts'ē'ts'aēqa.

The La'Lasiqoala use in the nō'nLEm ceremonial cormorant down in place of eagle down, white cedar bark in place of red cedar bark, red paint in place of black paint. They sing both profane songs and ts'ē'ts'aēqa songs. The celebration takes place in November and December.

Among the Kwakiutl the Laō'laxa may be celebrated at any time of the year. The man who desires to give the festival calls his clan or tribe to his house and informs them of his plans. I am obliged to Mr. George Hunt for the following description of such a meeting:

Ots'ēstalîs, a man whose mother was a Hē'iltsuq, was about to give a Laō'laxa. He invited his clan and spoke as follows:

"Now come, my tribe, come Ha'mts'it, come Yē'qawitē, come G·ē'so-yag·ilîs, come Lā'qoag·ila, come Tsō'palîs; come to hear the words of our chief. Come Guē'tEla, come Q'ō'moyuē, Walas Kwakiutl, Q'ō'mk·utîs. Thank you, my tribe, for coming. I must tell you about my plans. I will show the dance which came down from heaven, the Laō'laxa, the coming night. Take care, my tribe, take care all of you, you second class chiefs. I do not mean you, Chief Ha'mts'it. I mean Mā'Xua and Wā'nuk^{u} and Ō'ts'ēstalîs and Mā'mXua and Lā'lak·uts'a and you third class young chiefs. Now take care, the supernatural power will come to dwell among the tribes that are assembled at our camp, great Kwakiutl! Now I will tell you what I carry in my hands. I will give away my copper Wā'numg·ila to the Nā'q'oaqtôq, Koskimo, G·ō'p'ēnôx,

and L'ā'sq'ēnôx. Its price is 800 blankets. I think that will be enough for these eight tribes here, and my other copper Mā'mukoalila shall fall on the Ma'malēlēqala, Qoē'xsōt'ēnôx, and Nimkish, and the Lau'itsîs and Matilpē and T'Enā'xtax and A'wa-iLala and Ts'ā'watEēnôx and Hā'xuamîs. I think that is enough! Mā'mukoalila's price is 6,000 blankets. This will be enough for the nine tribes, and I will sell for food my copper Māu'aga, for which I paid 2,400 blankets at the time when Lalak·uts'a wanted to sell it quickly at Mē'mk·umlîs. Else the tribe might say that they are starving in this great country. But this way they can find no fault when they come." Sometimes one or the other of the old men said "yes, yes," during his speech, and he continued: "Furthermore, such is my pride, that I will kill on this fire this my copper, Dandalāyū, which is groaning in my house. You all know how much I paid for it. I bought it for 4,000 blankets. Now I will break it in order to vanquish our rival. I will make my house a fighting place for you, my tribe, wā. Now you know it all, my tribe; be happy, chiefs! for this is the first time that so great an invitation has been issued. There are 9,200 blankets, besides the 4,000 blankets for the copper that I am going to break. Now count all that the invitation will cost. It is 13,200 blankets, and besides 250 button blankets, 270 silver bracelets, and 7,000 brass bracelets, 240 wash basins, and I do not count the spoons, abalone shells, and the Laō'laxa head mask, and the numerous kettles which I am expecting from my wife. Now you know all my plans!"

Then Wā'k·as arose and spoke: "Wa, my tribe! Did you hear what our chief counted up? Are you not afraid of the various kinds of property which he is expecting? Now long life to you, O'ts'ēstalîs, you who were made a chief by your fathers. Take care of our chief, my tribe. Take care, Guē'tEla, Q'ō'moyuē, Walas Kwakiutl, and Q'ō'mk·utîs. He is vomiting everything that he has in his mind. My tribe, are you not also glad of our chief? I think you are proud in your hearts. Thank you, Ō'ts'ēstalîs. Thank you from my heart, chief. I wish you long life. You will be the first of all the chiefs of all tribes. So I say, Ts'ō'palîs, thus I say, Hä'masaqa, G·ēsoyag·ilīs, Ma'koayalisamē, Dā'dants'it, Lā'lakanx·it, wā, wā. So we say, our whole tribe."

Then arose Mā'mXua: "That is your speech, Chief O'ts'ēstalîs; that is your speech, Wā'k·as. Thank you, chief. How pretty is my chief! Thank you, friend. Now my heart is alive, for I was afraid when I heard the news of our rival. Ho, ho, ho. Now I lift the heavy weight of your speech, chief. Thank you, brother. So I say for my whole tribe." Then Ō'mx·'it arose and said: "Thank you for your speech, Ō'ts'ēstalîs. Long life to you for your speech. How well you stand on our earth. You will be the only post of our world. The chiefs of all the tribes will be jealous of you, you overhanging mountain, you chief who can not be equaled. You do not need to fear anything. How

great is your name, chief. Now you made my back strong. Take care, my tribe, and wish long life to our chiefs." Everybody applauded his speech. Then O'mx·'it sat down.

Next Hâ'mEsk·inîs arose and spoke. He said: "My tribe, are you not ashamed of this young man? He will be your chief, Kwakiutl! I am half ashamed myself on account of the amounts counted. Go on, my son, be proud of what you said." Then he lifted his right hand and shouted: "Hide yourselves, tribes! never was seen such an amount of property as our chief has called. Ya, ya, my tribe, do you not consider the great mountain of property of O'ts'ēstalîs dreadful? He is still a young man. Take care, my children, that you may have two men who will give away blankets to the whole world. That is what I say to the chiefs of the Kwakiutl, wā, wā."

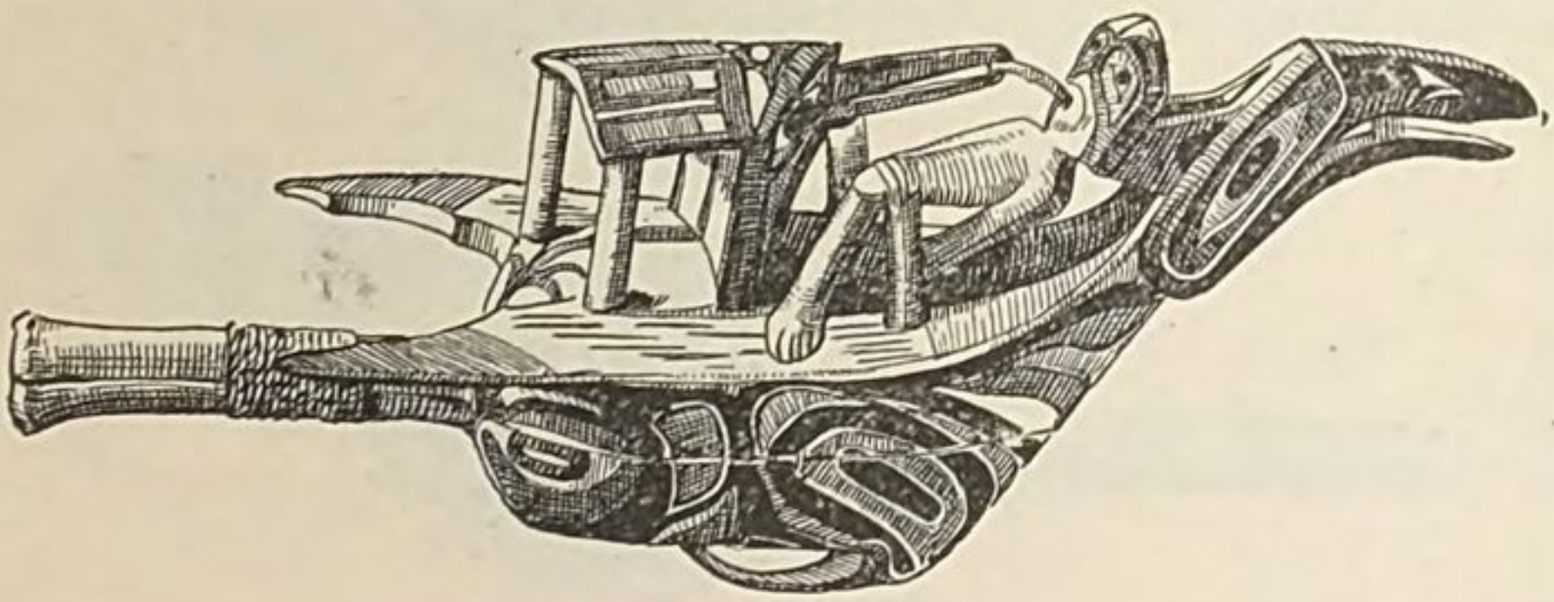

Fig. 190.

RAVEN RATTLE.

Length, 13 inches; blue, black, red.

IV A, No. 427, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

Now it was growing dark, and Ō'ts'ēstalîs arose and spoke: "Look at me, my tribe! Pretty is this young man; he is growing up well. Now I will sing the secret song and try to call the spirit of my dance."

The people said: "Go on." And he sung his secret song, calling down the spirit of the Laō'laxa:

1. I am the greatest magician, O hihihi, i, the greatest magician.
2. I alone am full of magic, O hihihi, i, the greatest magic.
3. I am the only one who makes life short by means of his magic, the greatest magic.
4. I am the only one who knows to call down the magical power, the greatest magic.
   Come now, magical power, O hihihi, i, greatest magic.

As soon as he had finished his song the noise of whistles came down to the roof of the house. Then they called all the women and children. They came to the dancing house for the Laō'laxa. Ō'ts'ēstalîs arose. He

was glad that the people had come quickly, and said: "Yes, my tribe, you have done right that you have come to this large house. Make yourselves comfortable. Don't be in a hurry to go home to your houses. Thus I say, Wā'k·as. Thus I say, Ōm'x·'it, wā, wā." Then the songmakers sang, and the people sat around them learning the songs of the dancer. When all knew the song, Ō'ts'ēstalîs arose and sang:

Ya, I am the first, hei, ya, ha.
Ya, my speech is the highest, hei, ya, ha.

He stopped singing and said: "Ho, ho, ho! Yes, my tribe. Thus I lift the heavy weight of my wealth. Now we will call all the tribes that they may come in the morning. Now go to sleep. That is all, friends." Then all the people, men, women, and children, left the house. The following morning the Kwakiutl went out in their canoes to invite all the tribes.

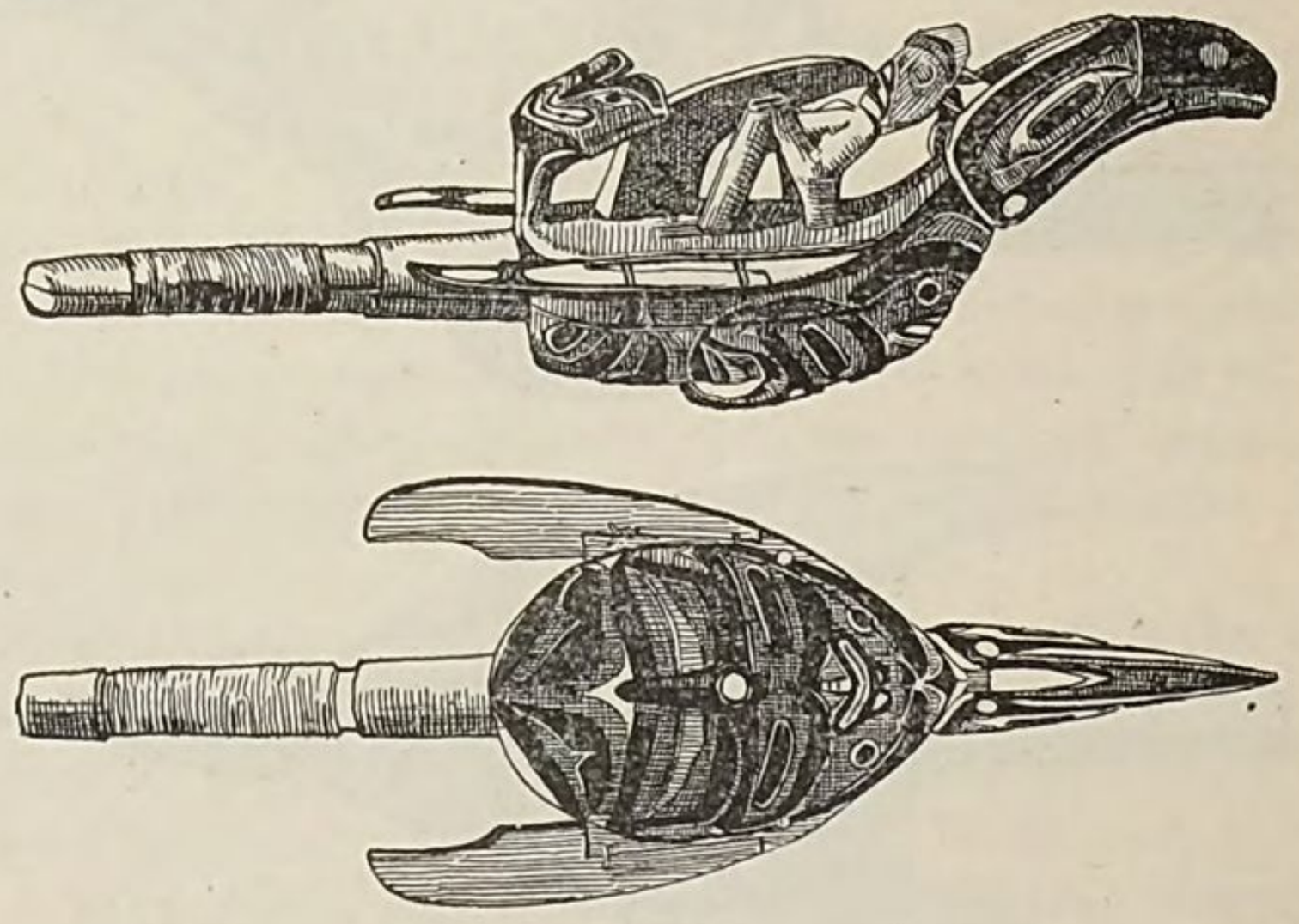

Fig. 191.

RAVEN RATTLE.

Length, 13 inches; blue, black, red.

IV A, No. 1366, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

As this festival was to be given to a number of tribes, all the Kwakiutl took part in this meeting. When only the Kwakiutl are to be present, the host announces his intention to his clan alone. Then, after the meeting is over, he sends word to the chiefs of all the clans, advising them that the Laō'laxa whistles will be heard that night. Then all those who have celebrated a Laō'laxa before may go to ask him what masks he intends to show, in order to make sure that he will not infringe upon their rights. In the evening the whistles are heard to blow behind the house of the man who is going to give the Laō'laxa. After about ten minutes they stop, and then blow again. This is repeated four times. For four nights the whistles are heard in the woods behind the house. The fourth night, after they have been blown in the woods three times, they are heard on the roof, and finally in the bedroom. Then the man begins to sing his secret song.

After finishing his songs he steps out of the door and calls all the people, the Guē′tɛla first, then the Q'o′moyuē, Walas Kwakiutl, and Q'ō′mk·utîs, in the order of their rank. He informs them that the spirit of the Laō′laxa has come to his house, and requests them to wash and to

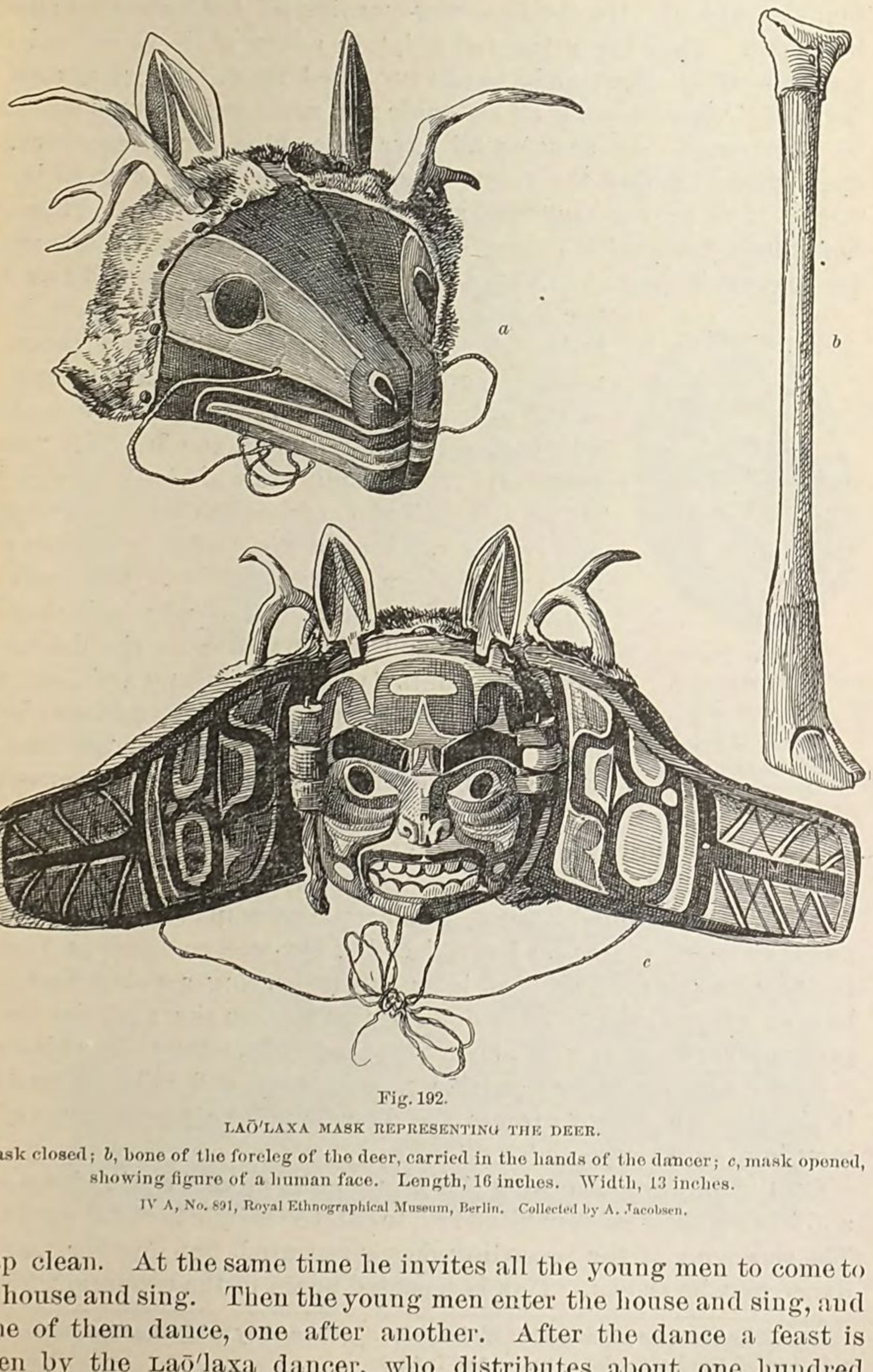

Fig. 192.

LAŌ′LAXA MASK REPRESENTING THE DEER.

a, mask closed; *b*, bone of the foreleg of the deer, carried in the hands of the dancer; *c*, mask opened, showing figure of a human face. Length, 16 inches. Width, 13 inches.

IV A, No. 891, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

keep clean. At the same time he invites all the young men to come to his house and sing. Then the young men enter the house and sing, and some of them dance, one after another. After the dance a feast is given by the Laō′laxa dancer, who distributes about one hundred

blankets among these young men. This signifies a promise to distribute food to all the people.

The young men put on the blankets and go from house to house saying: "This is food which you will receive to-morrow. It belongs to ————————.[1]" They go back to the host's house and return the blankets to him. On the following morning all the young men assemble again. They are given red paint to adorn their faces, and they are sent to call the people to the promised feast. Only the men are invited. After two calls all assemble and arrange in groups according to their clans. As soon as all have assembled, the messengers join their clans. Before the feast begins, four songs are sung, as is customary, two by the Guē'tEla and two by the Q'ō'moyuē. Then the host fills a ladle with grease and sends it to Hâwaxalag·ilîs, who is the highest in rank, and to the others in order. During all this time the Laō'laxa whistles are heard to blow in the bedroom. When the grease has been eaten, the relative of the host who is to be initiated comes out of the bedroom in which the whistles are sounding and begins to dance around the fire. He wears a beautiful carved headdress with long ermine trail (Plate 47). All of a sudden he throws his mask off and runs out. After a short while a dancer wearing the Laō'laxa mask comes in. His arrival is announced by a relative of the host who is stationed at the door, and who as soon as the dancer approaches shouts "wōî!" It is supposed that when the first dancer threw down his headdress, he became possessed by the spirit of the Laō'laxa and was transformed into the spirit which is personated by the mask. Actually another dancer wears the mask. After one circuit of the fire the mask disappears again, and the novice, for so we may call him, comes forward and continues the dance which was interrupted before. The people accompany the dance by the Laō'laxa song. After he has finished, a few women dance in honor of the new Laō'laxa. The host joins them, carrying a pole about 6 feet long on his shoulder. The pole indicates that on the next day he will give another feast, to which he invites the people, after ending his dance.

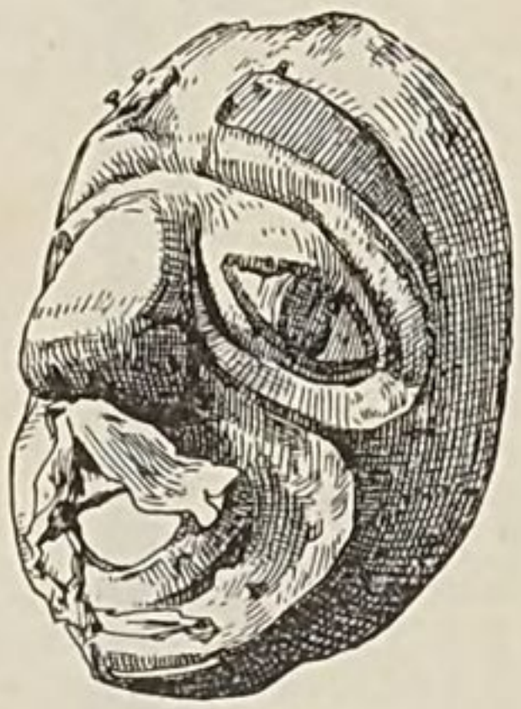

Fig. 193.
MASK OF NŌ'MAS.
La'Lasiqoala.
Height, 12 inches.
IV A, No. 6893, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

In the evening the whole tribe, men, women, and children, assemble in the host's house to witness the dance, and the performance of the morning is then repeated.

On the following morning the messengers go out again, dressed up and having their faces painted red, to call the people to the second feast. The ceremony of the preceding day is repeated, but another Laō'laxa dance may be shown. This is repeated again in the evening, when the

[1] Hamē'Laqasā' LE nsLa qasēx (WālasLāla). (Here they introduce the name of that relative of the host who is made Laō'laxa.)

LAŌ'LAXA DANCE.

From a photograph.

whole tribe witness the performance. At the end of the performance the host announces that on the following day he will distribute his blankets.

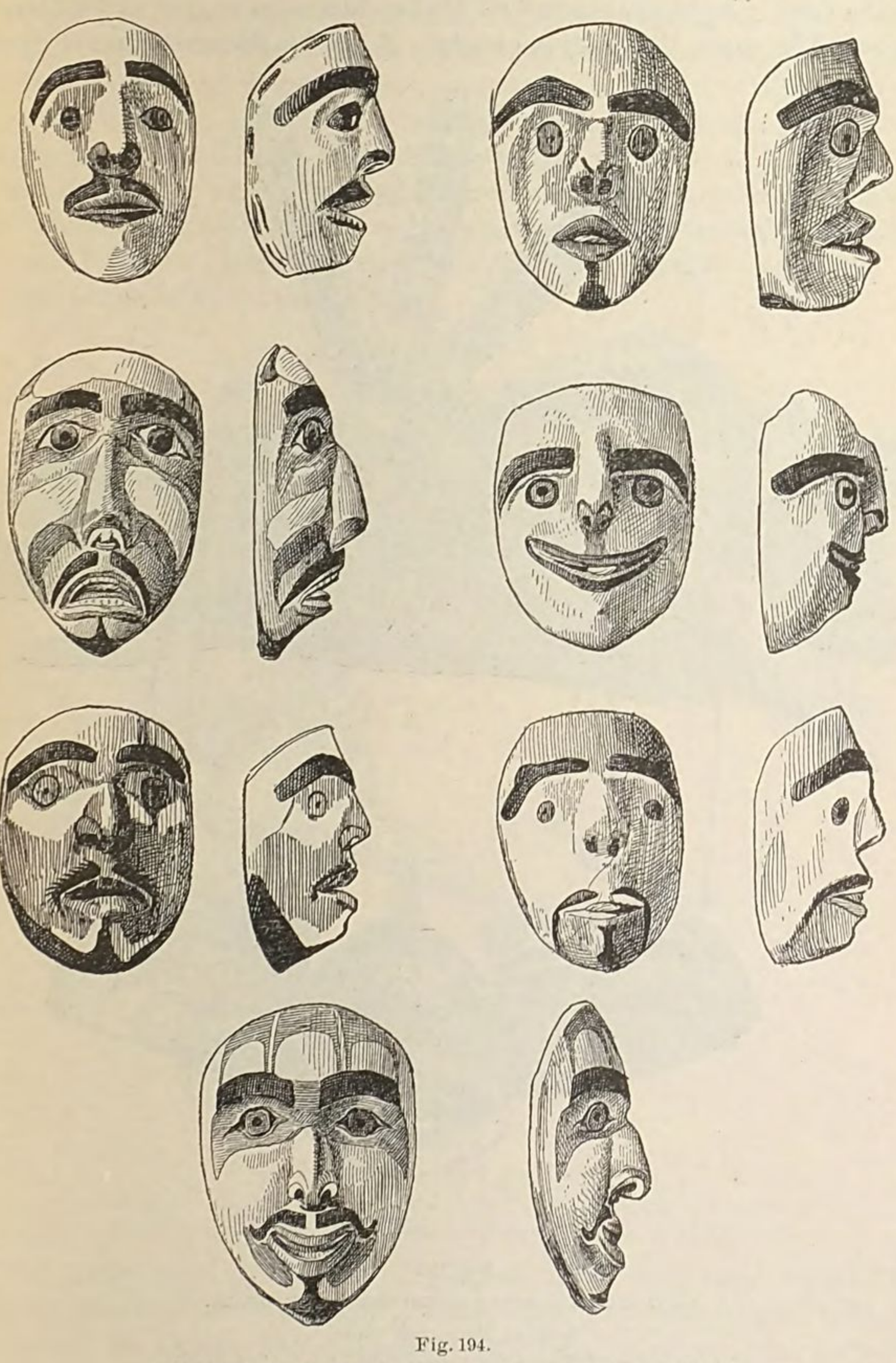

Fig. 194.

LAÕ'LAXA MASKS REPRESENTING SEVEN DIFFERENT SPEAKERS.

La'Lasiqoala. Scale $\frac{1}{3}$.

IV A, Nos. 6882-6888, Royal Ethnographical Museum, Berlin. Collected by F. Boas.

The next morning the nâ'qatē (the counter and tally keeper) arranges the blankets in piles, one for each clan, placing those intended for the chief of the clan on top. Thus the bundles are tied up. In the evening

the whole tribe assembles, and when all are seated in the house, the host sings his secret Laō'laxa song. He is followed by the novice, who also sings a secret song, and dances, wearing the headdress with ermine trail. Again he throws off his headdress, runs out, and a dancer appears who wears the Laō'laxa mask. After his dance the novice reap-

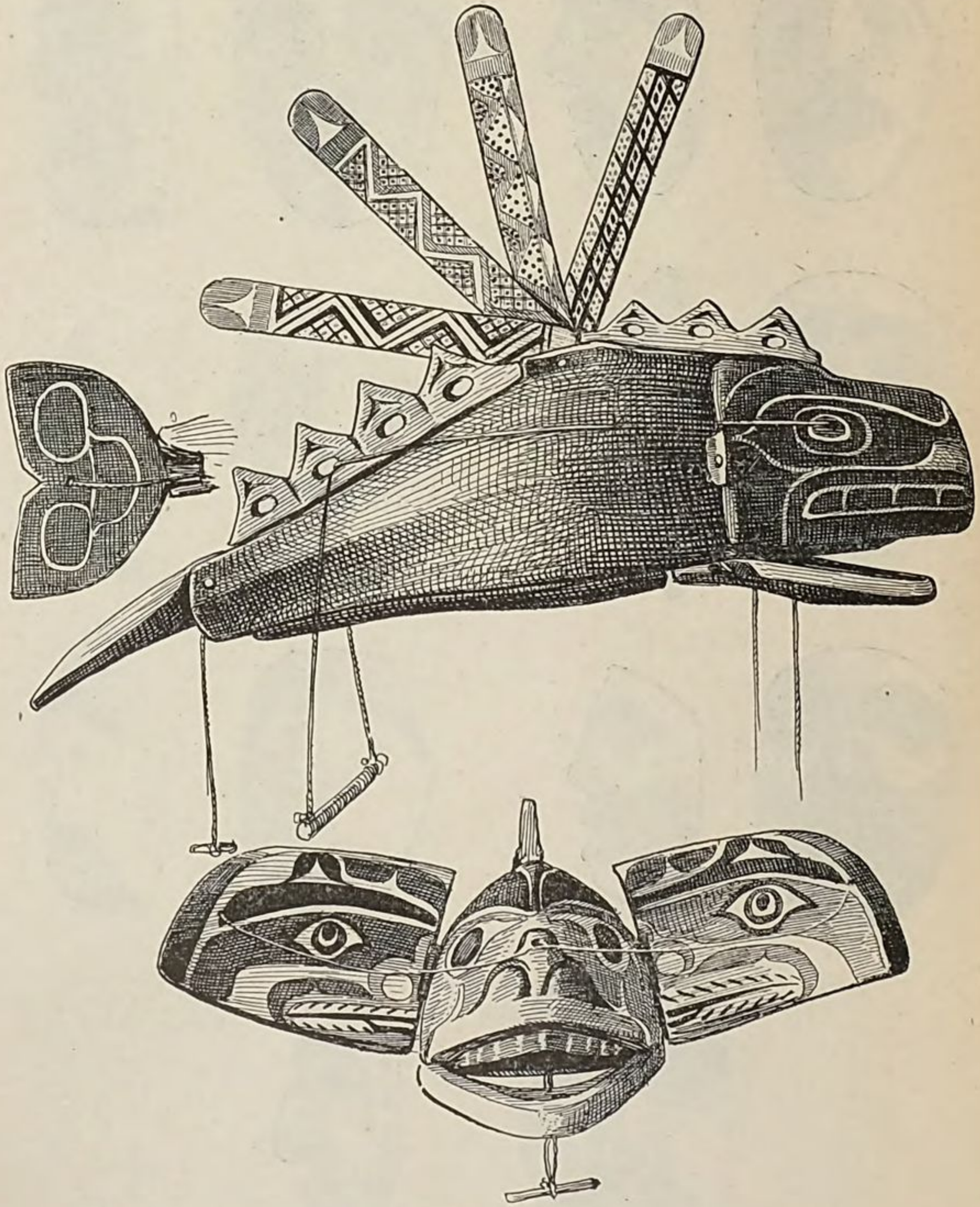

Fig. 195.

LAŌ'LAXA MASK REPRESENTING THE KILLER WHALE.

Scale $\frac{1}{8}$; black, red, white.

IV A, No. 1025, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

pears and continues his dance. Then the host steps forward, and in a speech gives the dancer the name belonging to the mask. This is the end of the Laō'laxa proper, and the whistles are heard no longer. At some festivals a number of masked persons, who represent speakers, come in at this moment and take hold of the host. Upon being asked

what they want, they praise his liberality, saying that he made all the tribes fat by the amount of grease he had given. Finally they are taken out of the house. Then the blankets are placed on top of a drum, which is laid down on its side. The man whose office it is to distribute blankets in the potlatch (dā′qɛmayaēnôx = taking the blanket at its top edge), of whom there is one in each clan, sits on top of the drum. His office is hereditary in the male line and considered as very important. He calls the people's names, and throws the blankets upon a mat lying in front of the drum. A man standing next to him carries the blankets to those who are to receive them. As soon as the blankets intended for one clan are distributed, he calls, "Let us change!"

This is the end of the Laō′laxa.

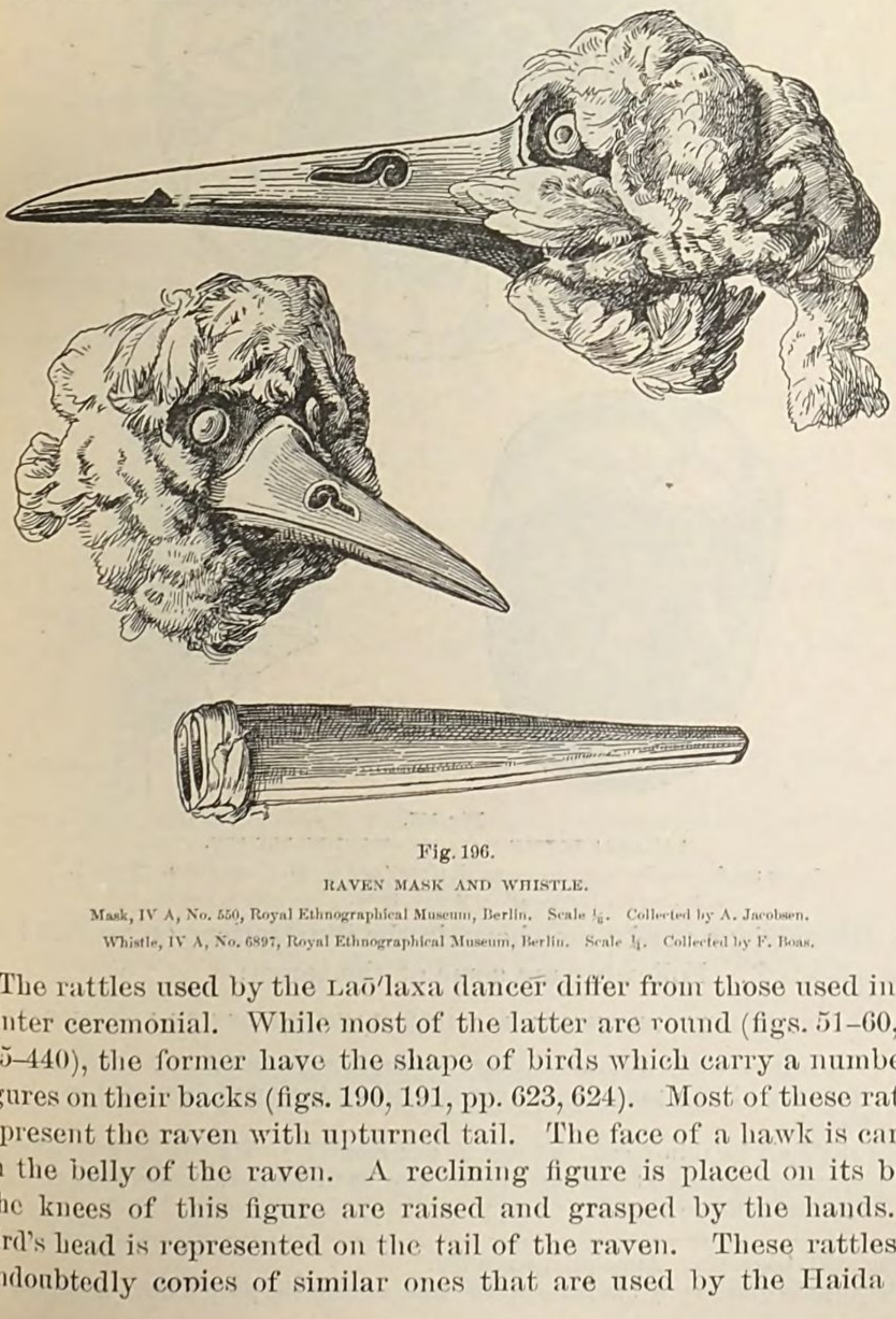

Fig. 196.

RAVEN MASK AND WHISTLE.

Mask, IV A, No. 550, Royal Ethnographical Museum, Berlin. Scale 1/6. Collected by A. Jacobsen.
Whistle, IV A, No. 6897, Royal Ethnographical Museum, Berlin. Scale 1/4. Collected by F. Boas.

The rattles used by the Laō′laxa dancer differ from those used in the winter ceremonial. While most of the latter are round (figs. 51–60, pp. 435–440), the former have the shape of birds which carry a number of figures on their backs (figs. 190, 191, pp. 623, 624). Most of these rattles represent the raven with upturned tail. The face of a hawk is carved on the belly of the raven. A reclining figure is placed on its back. The knees of this figure are raised and grasped by the hands. A bird's head is represented on the tail of the raven. These rattles are undoubtedly copies of similar ones that are used by the Haida and

Tsimshian. The primary idea underlying the form of rattle seems to have been lost, since the only explanation that has ever been given by the northern Indians is to the effect that it was given to their ancestors by a supernatural being. The Kwakiutl state that they obtained these rattles, with the LAŌ'LAXA ceremonies, from the HĒ'ILTSUQ.

Fig. 197.

LAŌ'LAXA DOUBLE MASK REPRESENTING THE SUN.

Outer mask, clouded sun; inner mask (front and profile), clear sun. Scale $\frac{1}{8}$.

IV A, No. 885, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

A few LAŌ'LAXA masks are shown in the illustrations on pp. 625 to 630 (figs. 192–197). Following are some of the songs:

SONG OF THE DEER, BELONGING TO THE LA'LAUILELA OF THE LA'LASIQOALA.[1]

1. We will drive away the great deer, who comes standing on his forelegs overtowering all the people, covering the tribes, the great deer, said by all to be foolish.
2. We shall all be thin-faced, and dry in our mouths.[2] We will go and cause him bad luck staring at him, staring at him until he gets sleepy, the great deer, said by all to be foolish.

[1] Fig. 192, page 625. Appendix, page 729.

[2] Because he gives away blankets all the time so that the people have no time to eat.

3. He was the first to make everything beautiful again, lighting the world by his glare, by the highness of his body, by the copper of his body. His antlers are pure, unbroken, solid copper. The speakers (chiefs) of all the tribes take off his antlers. Now let us drive him away. Let him jump far over the highest chief, the one who is famous among all the tribes, the great deer, said by all to be foolish.

SONG OF NŪ'NEMASEQÂLIS OR QÔA'LYAKOLĀL, BELONGING TO THE G'Ē'XSEM OF THE NAQÔ'MG'ILISALA.[1]

1. Long life to you, Nō'mas.
2. For you will give a feast, Nō'mas.
3. For you will build a fire and heat stones in it, Nō'mas.

This mask and song are used in both LAŌ'LAXA (viz, NŌ'NLEM) and BĀ'XUS feasts.

MASKS AND SONG OF AYÎ'LKOA (SPEAKERS).[2]

These masks are used in the dance called ADIXANĒ'SELAL (Tongass dance). According to the legend, a LA'LASIQOALA canoe drifted ashore in the north and they received the masks as presents (LŌ'KUĒ) from the Tongass. They are used by the LA'LA-UILELA in the NŌ'NLEM. The masks represent speakers; all sing and dance together. The names of the individual masks are not known.

1. Slowly we walk a race through the world.
2. Slowly we walk a race through the world.
3. Ha! I am the one who made the sky cloudy, when I came from the north end of the world.
4. Ha! I am the one who brought the fog, when I came from the north end of the world.
5. Ha! I am the one who brought the aurora, when I came from the great copper bringer.
6. Ha! I am the one who brought the warmth, when I came from the great one who brightens the world (the sun).
7. Ha! And then he will dance like a Tongass, your successor whom we praise.

SONG OF THE KILLER WHALE.[3]

A mask of the Kwakiutl, obtained by marriage from the Hē'iltsuq.

1. Praise the great killer whale, the great chief, when he emerges in our house.

SONG OF THE RAVEN.[4]

1. Qaqā'm qa qau. You are soaring through the world, great raven.
2. Qaqā'm qa qau. You know how to obtain property, great raven.

SECRET SONG OF A LAŌ'LAXA DANCER.[5]

1. O, you small chiefs, yiyaha.
2. You small ones are speaking to me, yiyaha.

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[1] Fig. 193, page 626; Appendix, page 729.
[2] Fig. 194, page 627; Appendix, page 730.
[3] Fig. 195, page 628; Appendix, page 730.
[4] Fig. 196, page 629; Appendix, page 731.
[5] Appendix, page 731.

The Ts'ō'noqoa is also used in Laō'laxa dances. When she enters, she wears a large basket on her back, in which she carries coppers. These are given to the host, who gives them away. In the legend, she carries a basket into which she puts children, whom she takes to her house.

As stated before, a number of the songs given in Chapter VIII, so far as they belong to the La'Lasiqoala, must be counted in this group.

In another dance the sun mask (fig. 197, p. 630) is used. The outer mask represents the cloudy sky, while the inner mask represents the clear sunshine.

XIII. The Religious Ceremonials of other Tribes of the North Pacific Coast.

THE NOOTKA.

The Nootka speak a dialect distantly related to the Kwakiutl. They have two ceremonials, which are analogous to the winter ceremonial of the Kwakiutl. Good descriptions of the customs connected with these ceremonials have been given by Sproat, Swan, Jewitt, and Knipping. I will repeat here what I have said on this subject in another place.[1] The name of the ceremonial among the Nootka is Lō'koala, a Kwakiutl word, which designates the finding of a manitou. The ceremonial corresponds very nearly to the Walas'axa' and to the Lō'koala of the Kwakiutl (pp. 477, 478). Certain features are, however, embodied in it, which correspond to other dances, mainly to the mā'tem and the hā'mats'a. The Lō'koala are a secret society who celebrate their festivals in winter only. They have a chief whose name is Yaqsyaqsṭē'itq. Anyone who wishes to join the Lō'koala can do so, or the society may invite a man to become a member. Then the friends of this man make a collection in his behalf and turn over the property collected to the chief of the Lō'koala, who distributes it during a feast among the members. Those who are not Lō'koala are called wīcta'k·ū, i. e., not being shamans. The Lō'koala is believed to have been instituted by the wolves, the tradition being that a chief's son was taken away by the wolves, who tried to kill him, but, being unsuccessful in their attempts, became his friends and taught him the Lō'koala. They ordered him to teach his people the ceremonies on his return home. They carried the youth back to his village. They also asked him to leave some red cedar bark for their own Lō'koala behind, whenever he moved from one place to another; a custom to which the Nootka tribes still adhere. Every new member of the Lō'koala must be initiated by the wolves. At night a pack of wolves—that is, Indians dressed in wolf skins and wearing wolf masks—make their appearance, seize the novice, and carry him into the woods. When the wolves are heard outside the village coming, in order to fetch the novice,

[1] Report of the British Association for the Advancement of Science, 1890, page 47.

the members of the LŌ'koala blacken their faces and sing the following song:[1]

Among all the tribes is great excitement because I am LŌ'koala.

On the following day the wolves return the novice dead. Then the LŌ'koala must revive him. The wolves are supposed to have put the magic stone häina[2] into his body, which must be removed in order to restore him to life. The body is left outside the house and two shamans go to remove the häina. It seems that this stone is quartz. The idea is the same as that found among the Kwakiutl, where the MĀ'TEM is initiated by means of quartz, which is put into his body by the spirit of his dance. The returning novice is called Ū'CĪNAK.

After the novices have been restored to life, they are painted red and black. Blood is seen to stream from their mouths, and they run at once down to the beach and jump into the water. Soon they are found to drift lifeless on the water. A canoe is sent out and the bodies are gathered in it. As soon as the canoe lands, they all return to life, resort to the dancing house, to which none but the initiated are admitted, and stay there for four days. At night, dances are performed in the house, which the whole population is allowed to witness. After the four days are over, the novices leave the house, their heads being wound with wreaths of hemlock (?) branches. They go to the river, in which they swim, and after some time are fetched back by a canoe. They are almost exhausted from the exertions they have undergone during the foregoing days. Novices must eat nothing but dried fish and dried berries.

Each LŌ'koala lasts four days. It is only celebrated when some member of the tribe gives away a large amount of property to the LŌ'koala, the most frequently occurring occasion being the initiation of new members. Sometimes it is celebrated at the time of the ceremonies which are practiced when a girl reaches maturity. The house of the man who pays for the LŌ'koala seems to be the taboo house of the society. As soon as the LŌ'koala begins, the ordinary social organization of the tribe is suspended, as is also the case among the Kwakiutl. The people arrange themselves in companies or societies, which bear the names of the various Nootka tribes, no matter to which tribe and sept the persons actually belong. Each society has festivals of its own, to which members of the other societies are not admitted, although they may be invited. These societies are called Ū'PAL. Each has a certain song, which is sung during their festivities.[3]

At night, when the whole tribe assemble in the taboo house, the societies still keep together. They are hostile to each other, and railleries between the various groups are continually going on. It

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[1] Appendix, page 731.

[2] XUĒ'la, Kwakiutl. The x of the Kwakiutl is, in the Ts'ECIĀ'ath dialect of the Nootka, from whom I obtained the word, always changed into h; n and l alternate constantly, for instance, LŌ'KUALĒ and LŌ'KUANĒ.

[3] Appendix, pages 731, 732.

seems that there are no separate societies for men and women, but a certain division must exist, as they seem to have separate feasts. When a man, during a Lō'koala, brings in any game, and he does not give half of it to the women, but retains the whole for the use of the men, the former will attack him and wrest the share due to them from the men. In the same way the women must share all they get or cook with the men.

Originally each dance belonged to one family, and was transmitted from generation to generation. Mother as well as father had the right to transfer their dances to their children. Thus dances which belonged to one tribe were transmitted to others. The dance was given to the novice at the time of his or her initiation, and no more than one dance could be given at a time. At present these restrictions are becoming extinct. Whoever is rich enough to distribute a sufficient amount of property may take any dance he likes. I was even told that the chief of the Lō'koala at the beginning of the dancing season distributes the various dances among the members of the order, and that he may redistribute them at the beginning of the following season.

It is a peculiarity of the dances of the Nootka that two masks of the same kind always dance together.

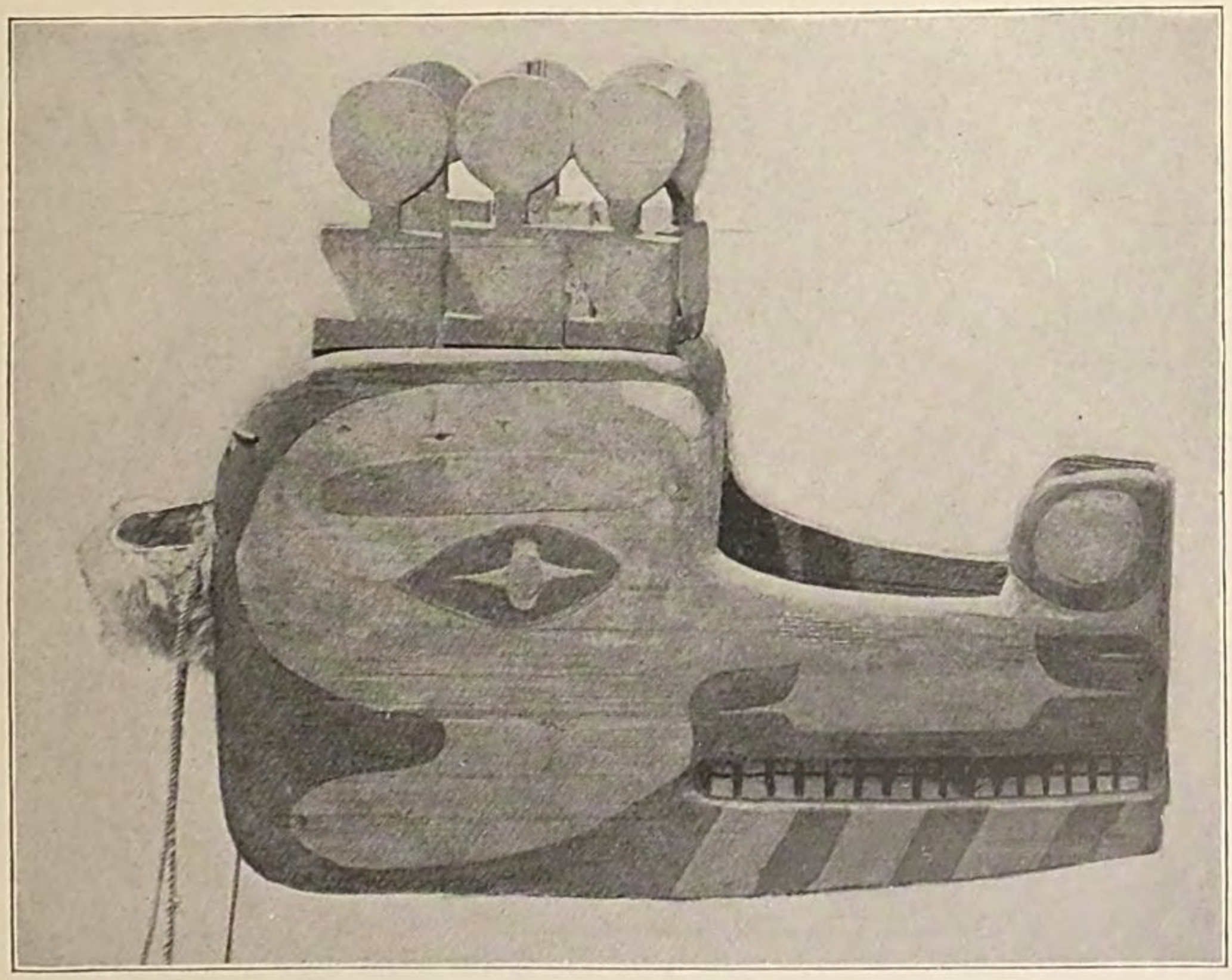
Among the dances belonging to the Lō'koala I mention the aai'Lqē (feathers on head). He is supposed to be a being living in the woods. The dancer wears no mask, but a head ornament of cedar bark dyed red, which is the badge of the Lō'koala. His badge consists of a ring from which four feathers wound with red cedar bark rise, three over the forehead, one in the back. The face of the dancer is smeared with tallow and then strewn with down. The ornaments of each dancer of the aai'Lqē, as well as of all others, must be their personal property. They must not be loaned or borrowed. The song of the aai'Lqē will be found in the Appendix (p. 732).

Another dance is that of the hî'nEmîx·, a fabulous bird-like being. The dancer wears the head mask shown in Plate 48. In the top of the mask there is a hole in which a stick is fastened, which is greased and covered with down. When the dancer moves, the down becomes loose, and whoever among the spectators catches a feather receives a blanket from the chief of the Lō'koala. The song of the hî'nEmix· is given in the Appendix (p. 732).

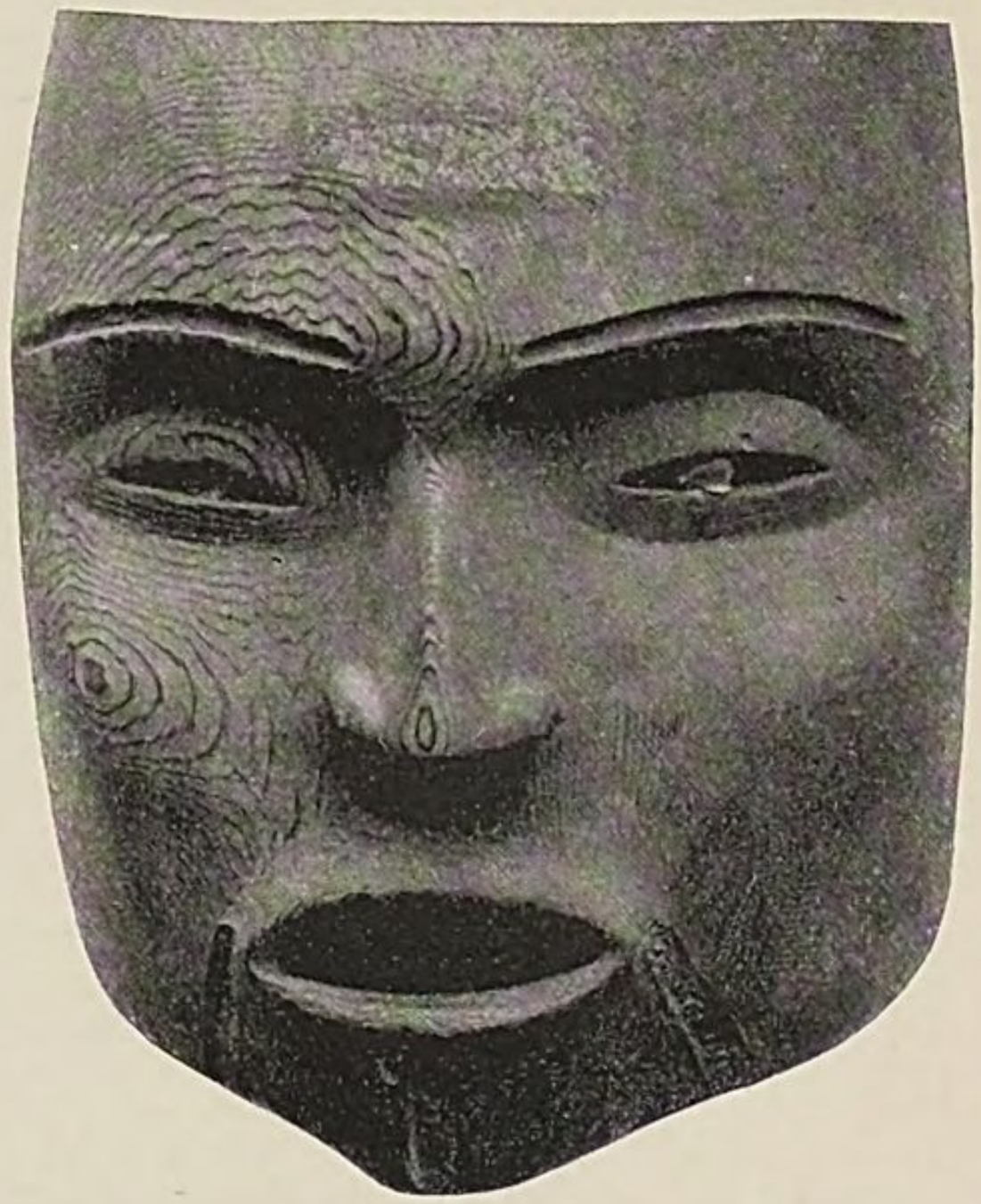
The A'Lmaxkō is a dance in which two men wearing two human masks appear. The masks are called A'Lmaxkō. When they appear, the spectators sing:

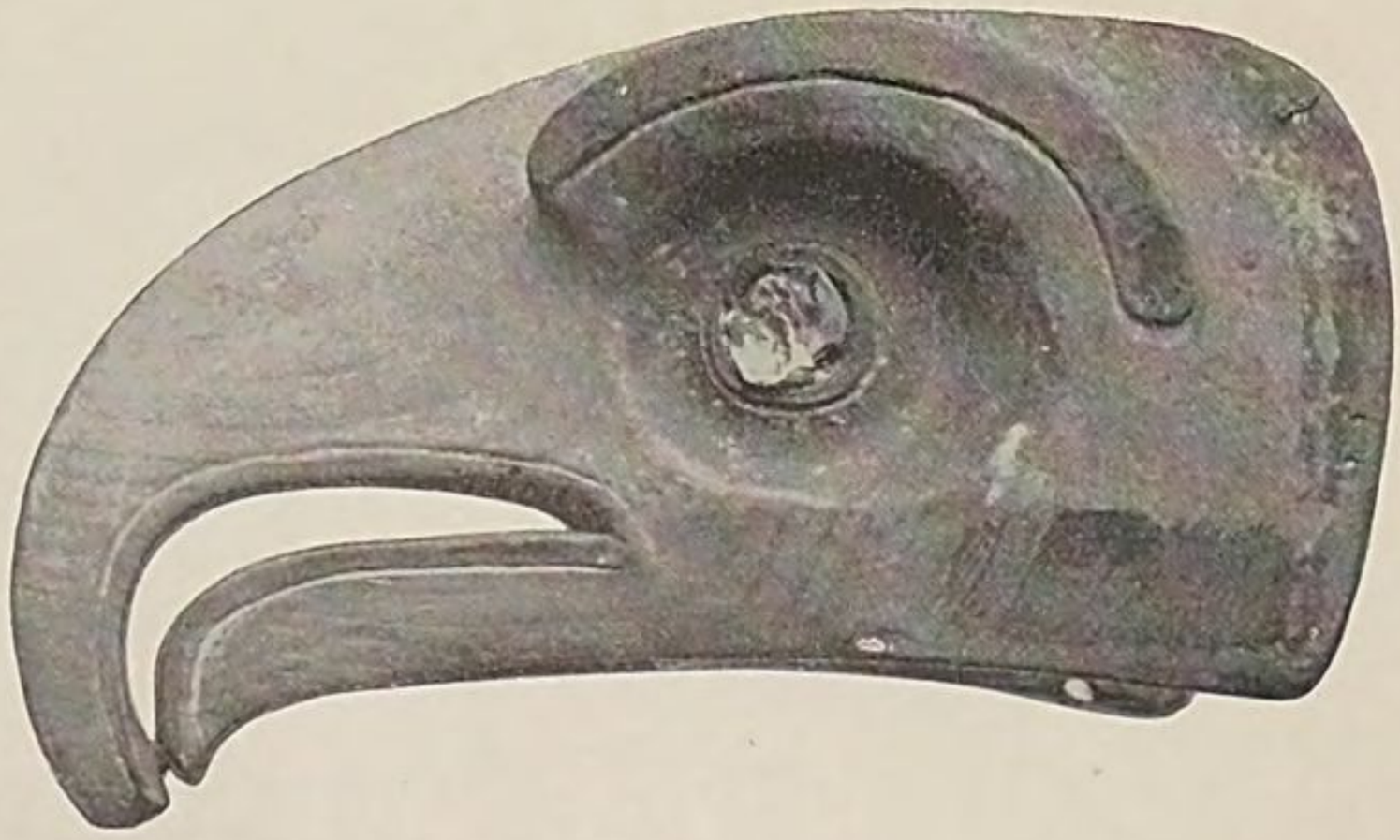
I. e., Back out, back out, A'Lmaxkō.

Then they leave the house and run about in the village. The A'Lmaxkō is a being living in the woods. The first to see him was a Netcumu'asath, and ever since this sept dances the A'Lmaxkō dance.



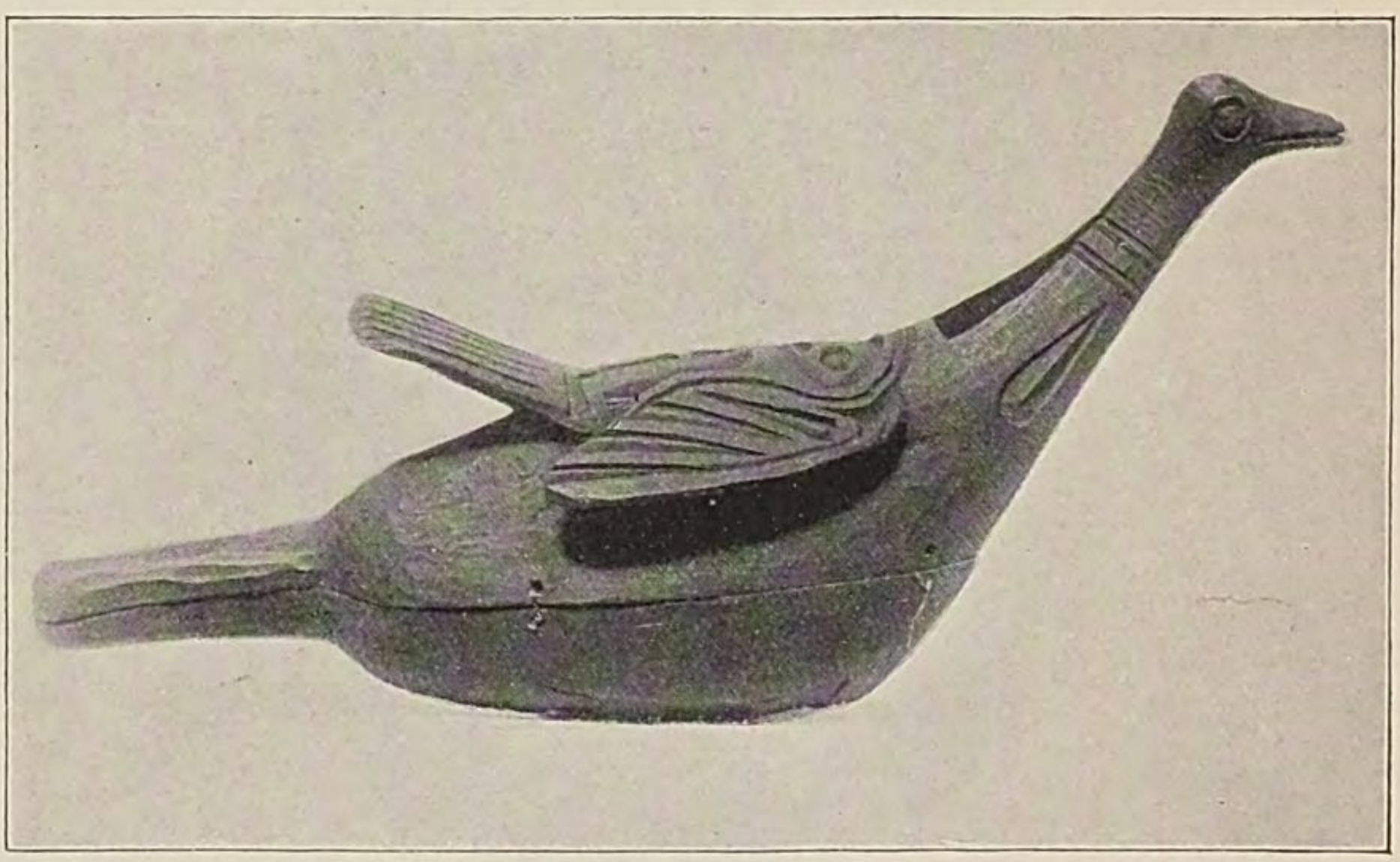
MASK OF THE NOOTKA, REPRESENTING THE HI'NEMIX.
Museum of the Geological Survey of Canada, Ottawa. Collected by F. Boas.

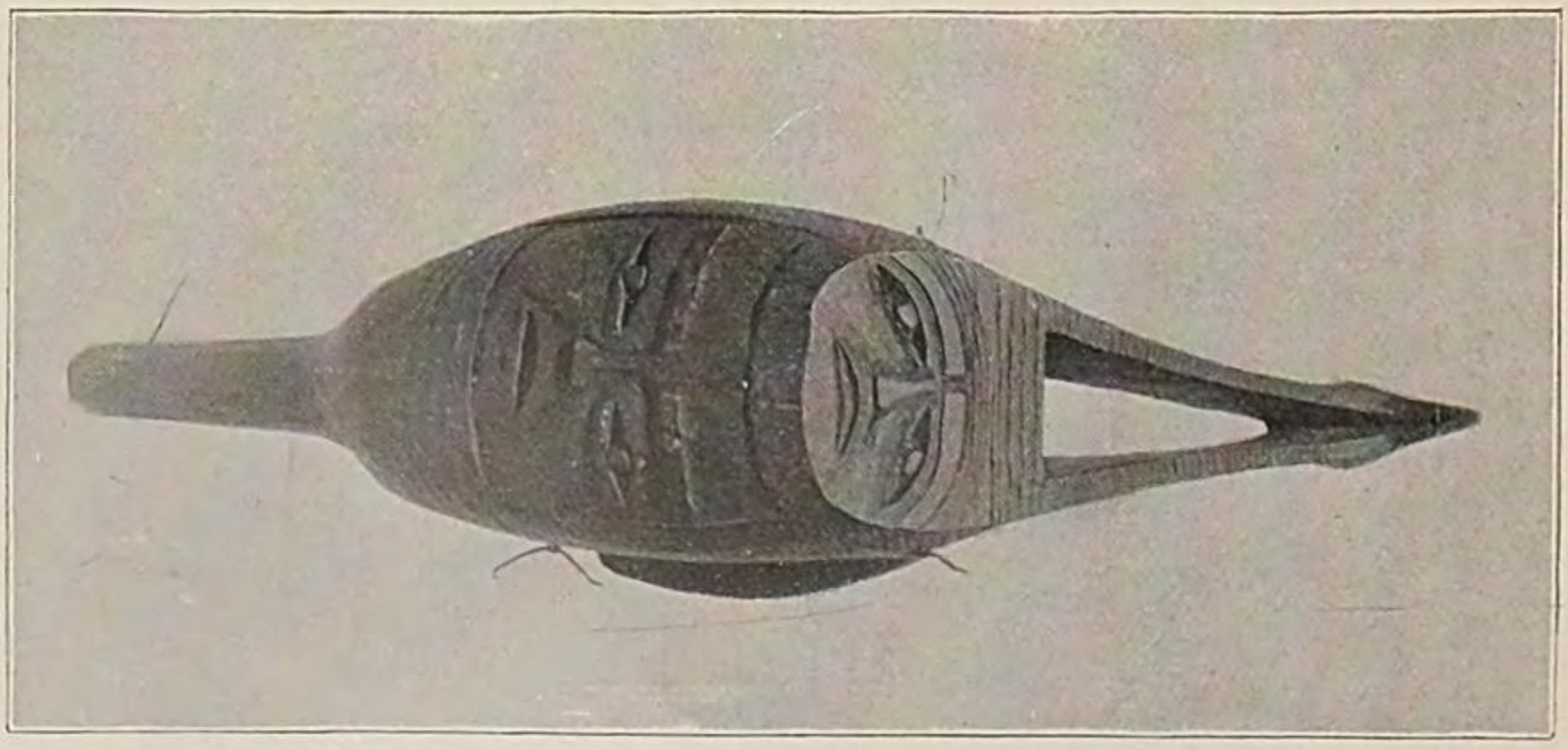




MASKS OF THE NOOTKA.

Nos. 222 and 223, K. K. Hofmuseum, Vienna.





RATTLE OF THE NOOTKA.
British Museum.

The sā′nEk (panther) corresponds nearly to the nūLmaL of the Kwakiutl. The dancer wears a large head mask, like that of the hî′nE-mîx·, and a bearskin. He knocks everything to pieces, pours water into the fire, and tears dogs to pieces and devours them. Two canine teeth in the mouth of the mask are its most characteristic feature. A rope is tied around his waist, by which he is led by some attendants.

The hī′Ltaq, self-torture, corresponds to the hāwī′nalaL of the Kwakiutl. The dancers rub their bodies with the juice of certain herbs, and push small lances through the flesh of the arms, the back, and the flanks.

Other dances are the pu′kmîs dance, in which the dancer is covered all over with pipeclay; the hu′Lmîs dance—the hu′Lmîs is another being which lives in the woods and is always dancing—performed by women only, who wear ornaments of red cedar bark and birds' down and who dance with one hand extended upward, the other hanging downward; the ā′yeq dance, in which the dancer knocks to pieces and destroys in other ways household utensils, canoes, and other kinds of property; and dances representing a great variety of animals, particularly birds. The masks are all much alike in type (fig. 198). Head rings made of red cedar bark are worn in these dances.

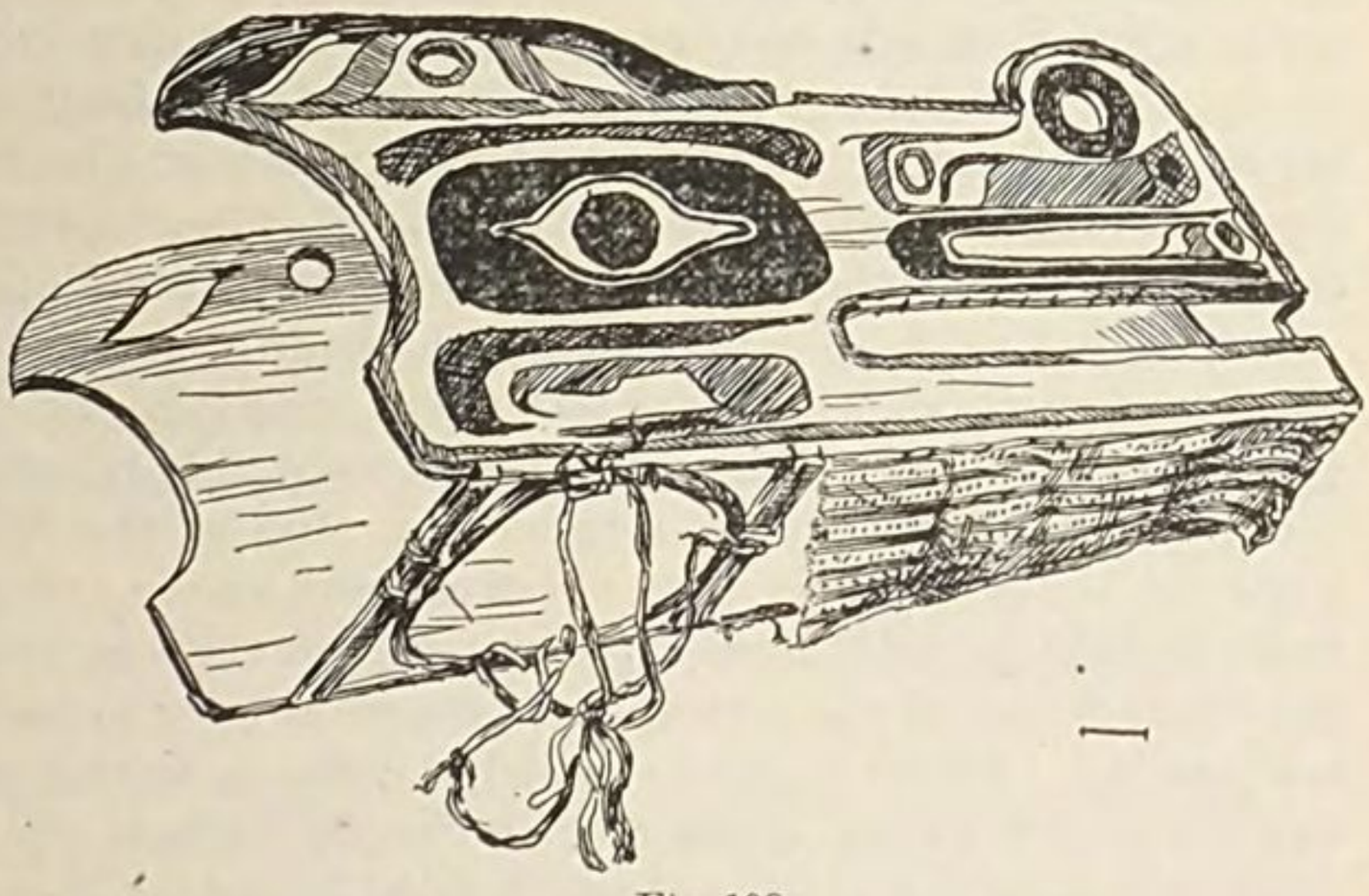


Fig. 198.
MASK OF THE NOOTKA.
Neeah Bay.
Cat. No. 23439, U. S. N. M. Collected by J. G. Swan.

Plate 49 shows an old bird mask and an old mask representing a human face. They are from the west coast of Vancouver Island, and were probably made before the beginning of this century. Plate 50 represents the type of rattle used by the Nootka. The present specimen was probably collected on Cook's journey around the world.

The tribes north of Barclay Sound have a dance in which the performer cuts long parallel gashes into his breast and arms. The hā′mats'a dance, which has been obtained by intermarriage from the Kwakiutl, has spread as far south as Nutcā′lath. The killing of slaves, which has been described by Sproat[1] and Knipping, may belong to this part of the Lō′koala.

Sproat describes the following events:

In December, 1864, the Seshaht Indians, then occupying their village close to Alberni, put one of their women to a violent death. The day before they commenced

[1] "Scenes and Studies of Savage Life," page 155.

a celebration of a peculiar character, which was to last several days, and the murder of the woman formed, no doubt, a part of this celebration. The woman was stabbed to death by an old man in whose house she lived, and who probably owned her as a slave, and offered her for a victim. The body was then laid out, without a covering, by the water side, about 150 yards from the houses. There appeared to be no inclination to bury the body, and it was only after the chief had been strongly remonstrated with that the poor victim's remains were removed, after two days' exposure. I observed that, even after this removal, certain furious rites took place over the very spot where the body had been exposed. The chief feature of the celebration, apart from the murder, was a pretended attack upon the Indian settlement by wolves, which were represented by Indians, while the rest of the population, painted, armed, and with furious shouts, defended their houses from attack. The horrid practice of sacrificing a victim is not annual, but only occurs either once in three years, or else (which is more probable) at uncertain intervals; always, however, when it does happen, the sacrifice takes place during the Klooh-quahn-nah (Lō'koala) season, which lasts from about the middle of November to the middle of January. The Klooh-quahn-nah or Klooh-quel-lah is a great festival, observed annually by all the Aht tribes, after their return from their fishing grounds to the winter encampment. It is generally a time of mirth and feasting, during which tribal rank is conferred and homage done to the chief, in a multitude of observances which have now lost their meaning, and can not be explained by the natives themselves. I was not aware, until this murder was committed under our eyes, that human sacrifices formed any part of the Klooh-quahn-nah celebration. I should think it likely that old worn-out slaves are generally the victims. The Seshaht Indians at Alberni represent the practice as most ancient, and the fact that the other tribes of the Aht nation (about twenty in number) observe it, favors this supposition. Their legends somewhat differ as to this practice, some saying that it was instituted by the creator of the world; others that it arose from the sons of a chief of former times having really been seized by wolves.[1] To some extent it is a secret institution, the young children not being acquainted with it until formally initiated. Many of them during the horrid rite are much alarmed; the exhibition of ferocity, the firing of guns and shouting being calculated, and probably intended, to excite their fears. Part of a day is given up to an instruction of those children who are to be initiated, and it is impressed upon them that the Klooh-quahn-nah must always be kept up, or evil will happen to the tribe. The tendency, no doubt, and probably the intention of this human sacrifice, and the whole celebration, is to destroy the natural human feeling against murder, and to form in the people generally, and especially in the rising generation, hardened and fierce hearts. They themselves say that their "hearts are bad," as long as it goes on. In the attendant ceremonies their children are taught to look, without any sign of feeling, upon savage preparations for war, strange dances performed in hideous masks and accompanied by unearthly noises, and occasionally, at least, upon the cruel destruction of human life. Although I have no direct evidence of the fact, I believe that part of the course of those to be initiated would be to view, howl over, and perhaps handle or even stick their knives into the dead body of the victim, without showing any sign of pity or of horror.

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[1]These Indians imitate animals and birds extremely well, such as wolves or crows. At this Klooh-quahn-nah celebration they had their hair tied out from their heads, so as to represent a wolf's head and snout, and the blanket was arranged to show a tail. The motion of the wolf in running was closely imitated. More extraordinary still was their acting as crows; they had a large wooden bill, and blankets arranged so like wings that, in the dusk, the Indians really seemed like large crows hopping about, particularly when, after the manner of these birds, they went into the shallow water, and shook their wings and "dabbed" with their long bills.

The following description may also refer to part of this ceremonial:[1]

During the song and dance, which at first seemed to present nothing peculiar, a well-known slave (one, however, who was in a comparatively independent position, being employed as a sailor on board the steamer *Thames*), suddenly ceased dancing, and fell down on the ground, apparently in a dying state, and having his face covered with blood. He did not move or speak, his head fell on one side, his limbs were drawn up, and he certainly presented a ghastly spectacle. While the dance raged furiously around the fallen man, the doctor, with some others, seized and dragged him to the other side of the fire round which they were dancing, placing his naked feet very near the flames. After this a pail of water was brought in, and the doctor, who supported the dying man on his arm, washed the blood from his face; the people beat drums, danced, and sang, and suddenly the patient sprang to his feet and joined in the dance, none the worse for the apparently hopeless condition of the moment before. While all this was going on, I asked the giver of the feast whether it was real blood upon the man's face, and if he were really wounded. He told me so seriously that it was, that I was at first inclined to believe him, until he began to explain that the blood which came from the nose and mouth was owing to the incantations of the medicine man, and that all the people would be very angry if he did not afterwards restore him. I then recalled to mind that in the early part of the day, before the feast, I had seen the doctor and the slave holding very friendly conferences; and the former had used his influence to get a pass for the latter to be present at the entertainment, to which, probably, he had no right to come.

In Jewett's narrative[2] the following description of part of the Lō'ko-ala occurs:

On the morning of December 13, another strange ceremony began, by the king's firing a pistol, apparently, without a moment's warning, close to the ear of Satsat, who dropped down instantly as if shot dead on the spot.

Upon this all the women set up a most terrible yelling, tearing out their hair by handfuls, and crying out that the prince was dead, when the men rushed in, armed with guns and daggers, inquiring into the cause of the alarm, followed by two of the natives covered with wolf skins, with masks representing the wolf's head.

These two came in on all fours, and taking up the prince on their back, carried him out, retiring as they had entered. * * *

The celebration terminated with a shocking and distressing show of deliberate self-torment.

These men, each with two bayonets run through their sides, between the ribs, walked up and down in the room, singing war songs, and exulting in their firmness and triumph over pain (p. 187). * * *

The religious ceremonies (in another village) were concluded by 20 men who entered the house, with arrows run through their sides and arms, having strings fastened to them, by which the spectators twisted, or pulled them back, as the men walked round the room, singing and boasting of their power to endure suffering (p. 192).

Another description of the ceremonial has been given by James G. Swan:[3]

The Dukwally (i. e., LŌ'KOALA) and other tama'nawas performances are exhibitions intended to represent incidents connected with their mythological legends. There

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[1] Sproat, "Scenes and Studies of Savage Life," page 68.

[2] "The Captive of Nootka, or the Adventures of John R. Jewett," Philadelphia, 1841, page 184.

[3] "The Indians of Cape Flattery," page 66.

are a great variety, and they seem to take the place, in a measure, of theatrical performances or games during the season of the religious festivals. There are no persons especially set apart as priests for the performance of these ceremonies, although some, who seem more expert than others, are usually hired to give life to the scenes, but these performers are quite as often found among the slaves or common people as among the chiefs, and excepting during the continuance of the festivities are not looked on as of any particular importance. On inquiring the origin of these ceremonies, I was informed that they did not originate with the Indians, but were revelations of the guardian spirits, who made known what they wished to be performed. An Indian, for instance, who has been consulting with his guardian spirit, which is done by going through the washing and fasting process before described, will imagine or think he is called upon to represent the owl. He arranges in his mind the style of dress, the number of performers, the songs and dances or other movements, and, having the plan perfected, announces at a tama'nawas meeting that he has had a revelation which he will impart to a select few. These are then taught and drilled in strict secrecy, and when they have perfected themselves, will suddenly make their appearance and perform before the astonished tribe. Another Indian gets up the representation of the whale, others do the same of birds, and in fact of everything that they can think of. If any performance is a success, it is repeated, and gradually comes to be looked upon as one of the regular order in the ceremonies; if it does not satisfy the audience, it is laid aside. Thus they have performances that have been handed down from remote ages, while others are of a more recent date. * * *

The ceremony of the great Dukwally or the thunder bird originated with the Hesh-kwi-et Indians, a band of Nittinats living near Barclay Sound, Vancouver Island, and is ascribed to the following legend:

Two men had fallen in love with one woman, and as she would give neither the preference, at last they came to a quarrel. But one of them, who had better sense than the other, said: "Don't let us fight about that squaw; I will go out and see the chief of the wolves, and he will tell me what is to be done. But I can not get to his lodge except by stratagem. Now they know we are at variance, so do you take me by the hair, and drag me over these sharp rocks which are covered with barnacles, and I shall bleed, and I will pretend to be dead, and the wolves will come and carry me away to their house." The other agreed, and dragged him over the rocks till he was lacerated from head to foot, and then left him out of reach of the tide. The wolves came, and, supposing him dead, carried him to the lodge of their chief, but when they got ready to eat him, he jumped up and astonished them at his boldness. The chief wolf was so much pleased with his bravery that he imparted to him all the mysteries of the thunder-bird performance, and on his return home he instructed his friends, and the Dukwally was the result. The laceration of the arms and legs among the Makahs, during the performance to be described, is to represent the laceration of the founder of the ceremony from being dragged over the sharp stones.

A person intending to give one of these performances first gathers together as much property as he can obtain, in blankets, guns, brass kettles, beads, tin pans, and other articles intended as presents for his guests, and procures a sufficient quantity of food, which of late years consists of flour, biscuit, rice, potatoes, molasses, dried fish, and roots. He keeps his intention a secret until he is nearly ready, and then imparts it to a few of his friends, who, if need be, assist him by adding to his stock of presents of food. The first intimation the village has of the intended ceremonies is on the night previous to the first day's performance. After the community have retired for the night, which is usually between 9 and 10 o'clock, the performers commence by hooting like owls, howling like wolves, and uttering a sharp whistling sound intended to represent the blowing and whistling of the wind. Guns are then fired, and all the initiated collect in the lodge where the ceremonies

are to be performed, and drum with their heels on boxes or boards, producing a sound resembling thunder. The torches of pitch wood are flashed through the roof of the house, and at each flash the thunder rolls, and then the whole assemblage whistles like the wind. As soon as the noise of the performers commences, the uninitiated fly in terror and hide themselves, so great being their superstitious belief in the supernatural powers of the Dukwally that they have frequently fled to my house for protection, knowing very well that the tama'nawas performers would not come near a white man. They then visit every house in the village, and extend an invitation for all to attend the ceremonies. This having been done, the crowd retire to the lodge of ceremonies, where the drumming and singing are kept up till near daylight, when they are quiet for a short time, and at sunrise begin again. The first five days are usually devoted to secret ceremonies, such as initiating candidates, and a variety of performances, which consist chiefly in songs and chorus and drumming to imitate thunder. They do this part very well, and their imitation of thunder is quite equal to that produced in the best equipped theatre.

What the ceremony of initiation is I have never learned. That of the Clallams, which I have witnessed, consists in putting the initiates into a mesmeric sleep; but if the Makahs use mesmerism, or any such influence, they do not keep the candidates under it for any great length of time, as I saw them every day during the ceremonies, walking out during the intervals. The first outdoor performance usually commences on the fifth day, and this consists of the procession of males and females, with their legs and arms, and sometimes their bodies, scarified with knives, and every wound bleeding freely. The men are entirely naked, but the women have on a short petticoat. * * * [The wounds are made as follows:] A bucket of water was placed in the center of the lodge, and the candidates squatting around it washed their arms and legs. The persons who did the cutting, and who appeared to be any one who had sharp knives, butcher knives being preferred, grasped them firmly in the right hand with the thumb placed along the blade, so as to leave but an eighth or quarter of an inch of the edge bare; then, taking hold of the arm or leg of the candidate, made gashes 5 or 6 inches long transversally, and parallel with the limb, four or five gashes being cut each way. Cuts were thus made on each arm above and below the elbow, on each thigh, and the calves of the legs; some, but not all, were likewise cut on their backs. The wounds were then washed with water to make the blood run freely. * * * When all was ready, the procession left the lodge and marched in single file down to the beach, their naked bodies streaming with blood, presenting a barbarous spectacle. A circle was formed at the water's edge, round which this bloody procession marched slowly, making gesticulations and uttering howling cries.

Five men now came out of the lodge carrying the principal performer. One held him by the hair, and the others by the arms and legs. He, too, was cut and bleeding profusely. They laid him down on the beach on the wet sand, and left him, while they marched off and visited every lodge in the village, making a circuit in each lodge. At last the man on the beach jumped up, and seizing a club laid about him in a violent manner, hitting everything in his way. He, too, went the same round as the others, and after every lodge had been visited, they all returned to the lodge from which they had issued, and the performances outdoor were closed for that day. In the meanwhile a deputation of fifteen or twenty men, with faces painted black and sprigs of evergreen in their hair, had been sent to the other villages with invitations for guests to come and receive presents. They went in a body to each lodge, and after a song and a chorus the spokesman of the party, in a loud voice, announced the object of their visit, and called the names of the invited persons. Anyone has a right to be present at the distribution, but only those specially invited will receive any presents.

Every evening during the ceremonies, excepting those of the first few days, is devoted to masquerade and other amusements, when each lodge is visited and a

performance enacted. * * * The masks are made principally by the Clyoquot and Nittinat Indians, and sold to the Makahs, who paint them to suit their own fancies. They are made of alder, maple, and cottonwood; some are very ingeniously executed, having the eyes and lower jaw movable. By means of a string the performer can make the eyes roll about, and the jaws gnash together with a fearful clatter. As these masks are kept strictly concealed until the time of the performances, and as they are generally produced at night, they are viewed with awe by the spectators; and certainly the scene in one of these lodges, dimly lighted by the fires which show the faces of the assembled spectators and illuminate the performers, presents a most weird and savage spectacle when the masked dancers issue forth from behind a screen of mats, and go through their barbarous pantomimes. The Indians themselves, even accustomed as they are to these masks, feel very much afraid of them, and a white man, viewing the scene for the first time, can only liken it to a carnival of demons.

Among the masquerade performances that I have seen was a representation of mice. This was performed by a dozen or more young men who were entirely naked. Their bodies, limbs, and faces were painted with stripes of red, blue, and black; red bark wreaths were twisted around their heads, and bows and arrows in their hands. They made a squealing noise, but otherwise they did nothing that reminded me of mice in the least. Another party was composed of naked boys, with bark fringes, like veils, covering their faces, and armed with sticks having needles in one end; they made a buzzing noise and stuck the needles into any of the spectators who came in their way. This was a representation of hornets. These processions followed each other at an interval of half an hour, and each made a circuit round the lodge, performed some antics, sang some songs, shouted, and left. Another party then came in, composed of men with frightful masks, bearskins on their backs, and heads covered with down. They had clubs in their hands, and as they danced around a big fire blazing in the center of the lodge, they struck wildly with them, caring little whom or what they hit. One of their number was naked, with a rope round his waist, a knife in each hand, and making a fearful howling. Two others had hold of the end of the rope, as if to keep him from doing any harm. This was the most ferocious exhibition I had seen, and the spectators got out of their reach as far as they could. They did no harm, however, excepting that one with his club knocked a hole through a brass kettle; after which they left and went to the other lodges, where I learned that they smashed boxes and did much mischief. After they had gone, the owner examined his kettle, and quaintly remarked that it was worth more to him than the pleasure he had experienced by their visit, and he should look to the man who broke it for remuneration.

On a subsequent evening I was present at another performance. This consisted of dancing, jumping, firing of guns, etc. A large fire was first built in the center of the lodge, and the performers, with painted faces, and many with masks resembling owls, wolves, and bears, crouched down with their arms clasped about their knees, their blankets trailing on the ground and fastened around the neck with a single pin. After forming in a circle with their faces toward the fire, they commenced jumping sideways round the blaze, their arms still about their knees. In this manner they whirled around for several minutes, producing a most remarkable appearance. These performers, who were male, were succeeded by some thirty women with blackened faces, their heads covered with down, and a girdle around their blankets, drawing them in tight at the waist. These danced around the fire with a shuffling, ungainly gait, singing a song as loud as they could scream, which was accompanied by everyone in the lodge, and beating time with sticks on boards placed before them for the purpose. When the dance was over, some five or six men, with wreaths of seaweed around their heads, blackened faces, and bearskins over their shoulders, rushed in and fired a volley of musketry through the roof. One of them then made a speech, the purport of which was that the ceremonies had progressed favorably thus far; that their hearts had become strong, and that they felt ready to attack their

enemies or to repel any attack upon themselves. Their guns having in the meanwhile been loaded, another volley was fired, and the whole assembly uttered a shout to signify approval. The performances during the daytime consisted of representations on the beach of various kinds. There was one representing a whaling scene. An Indian on all fours, covered with a bearskin, imitated the motion of a whale while blowing. He was followed by a party of eight men armed with harpoons and lances, and carrying all the implements of whaling. Two boys, naked, with bodies rubbed over with flour, and white cloths around their heads, represented cold weather; others represented cranes moving slowly at the water's edge and occasionally dipping their heads down as if seizing a fish. They wore masks resembling a bird's beak, and bunches of eagles' feathers stuck in their hair. During all of these scenes the spectators kept up a continual singing and drumming. Every day during these performances feasts were given at different lodges to those Indians who had come from the other villages, at which great quantities of food were eaten and many cords of wood burned, the giver of the feast being very prodigal of his winter's supply of food and fuel. The latter, however, is procured quite easily from the forest, and only causes a little extra labor to obtain a sufficiency.

The final exhibition of the ceremonies was the T'hlūkloots representation, after which the presents were distributed. From daylight in the morning till about 11 o'clock in the forenoon was occupied by indoor performances, consisting of singing and drumming, and occasional speeches. When these were over, some twenty performers, dressed up in masks and feathers, some with naked bodies, others covered with bearskins, and accompanied by the whole assembly, went down on the beach and danced and howled in the most frightful manner. After making as much uproar as they could, they returned to the lodge, and shortly after every one mounted on the roofs of the houses to see the performance of the T'hlūkloots. First, a young girl came out upon the roof of a lodge, wearing a mask representing the head of the thunderbird, which was surmounted by a topknot of cedar bark dyed red and stuck full of white feathers from eagles' tails. Over her shoulders she wore a red blanket covered with a profusion of white buttons, brass thimbles, and blue beads; her hair hung down her back, covered with white down. The upper half of her face was painted black, and the lower red. Another girl, with a similar headdress, was naked except a skirt about her hips. Her arms and legs had rings of blue beads, and she wore bracelets of brass wire around her wrists; her face being painted like the other. A smaller girl had a black mask to resemble the ha-he'k-to-ak. The masks did not cover the face, but were on the forehead, from which they projected like horns. The last girl's face was also painted black and red. From her ears hung large ornaments made of the haikwa or dentalium, and blue and red beads, and around her neck was an immense necklace of blue beads. Her skirt was also covered with strings of beads, giving her quite a picturesque appearance. A little boy, with a black mask and headband of red bark, the ends of which hung down over his shoulders, and eagles' feathers in a topknot, was the remaining performer. They moved around in a slow and stately manner, occasionally spreading out their arms to represent flying, and uttering a sound to imitate thunder, but which resembled the noise made by the nighthawk when swooping for its prey, the spectators meanwhile beating drums, pounding the roofs with sticks, and rattling with shells. This show lasted half an hour, when all again went into the lodge to witness the distribution of presents and the grand finale. The company all being arranged, the performers at one end of the lodge and the women, children, and spectators at the other, they commenced by putting out the fires and removing the brands and cinders. A quantity of feathers were strewed over the ground floor of the lodge, and a dance and song commenced, every one joining in the latter, each seeming to try to make as much noise as possible. A large box, suspended by a rope from the roof, served as a bass drum, and other drums were improvised from the brass and sheet-iron kettles and tin pans belonging to the domestic furniture of the house, while those who had no kettles, pans, or boxes banged with their clubs on the roof and sides of the house till the noise was

almost deafening. In this uproar there was a pause; then the din commenced anew. This time the dancers brought out blankets, and with them beat the feathers on the floor till the whole air was filled with down, like flakes of snow during a heavy winter's storm. Another lull succeeded, then another dance, and another shaking up of feathers, till I was half choked with dust and down. Next the presents were distributed, consisting of blankets, guns, shirts, beads, and a variety of trinkets, and the whole affair wound up with a feast.

I presume the following custom belongs here as well. When the incantations and practices of the shaman are of no avail, the patient is initiated in a secret society called tsa'yēq. Evidently this name is derived from the Kwakiutl word ts'ā'eqa, thus suggesting that this ceremony also was borrowed from the winter ceremonial of the Kwakiutl. I obtained the following description of these ceremonies: The members of the tsa'yēq assemble and make a circuit through the whole village, walking in Indian file and in a circle, so that their left hand is on the inner side (opposite the hands of a clock). Nobody is allowed to laugh while they are making their circuit. The tsa'yēq of the Hopetcisā'th and Ts'ecā'ath sing as follows during this circuit:

Ha, hä, hä', he is not a shaman.[1]

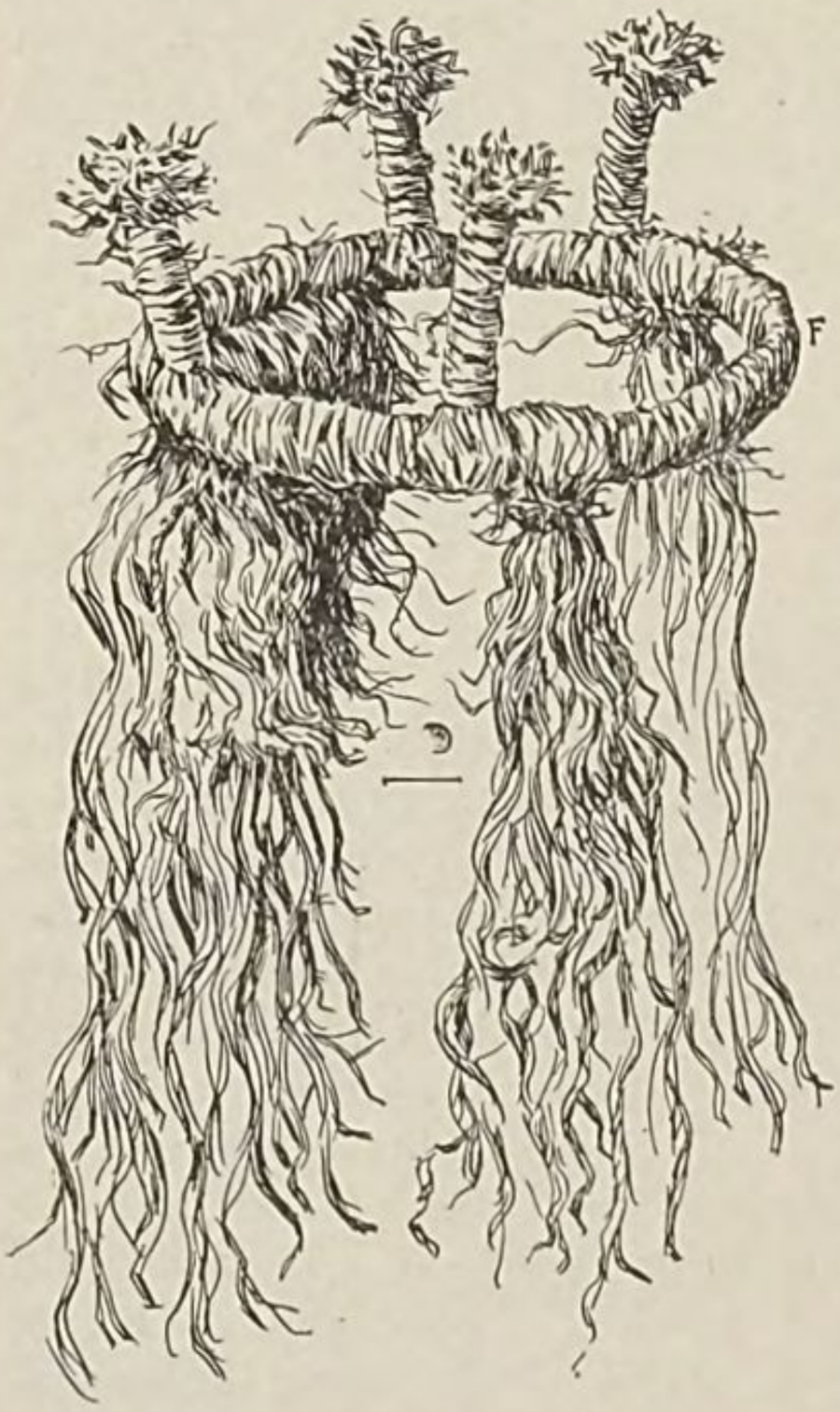


Fig. 199.

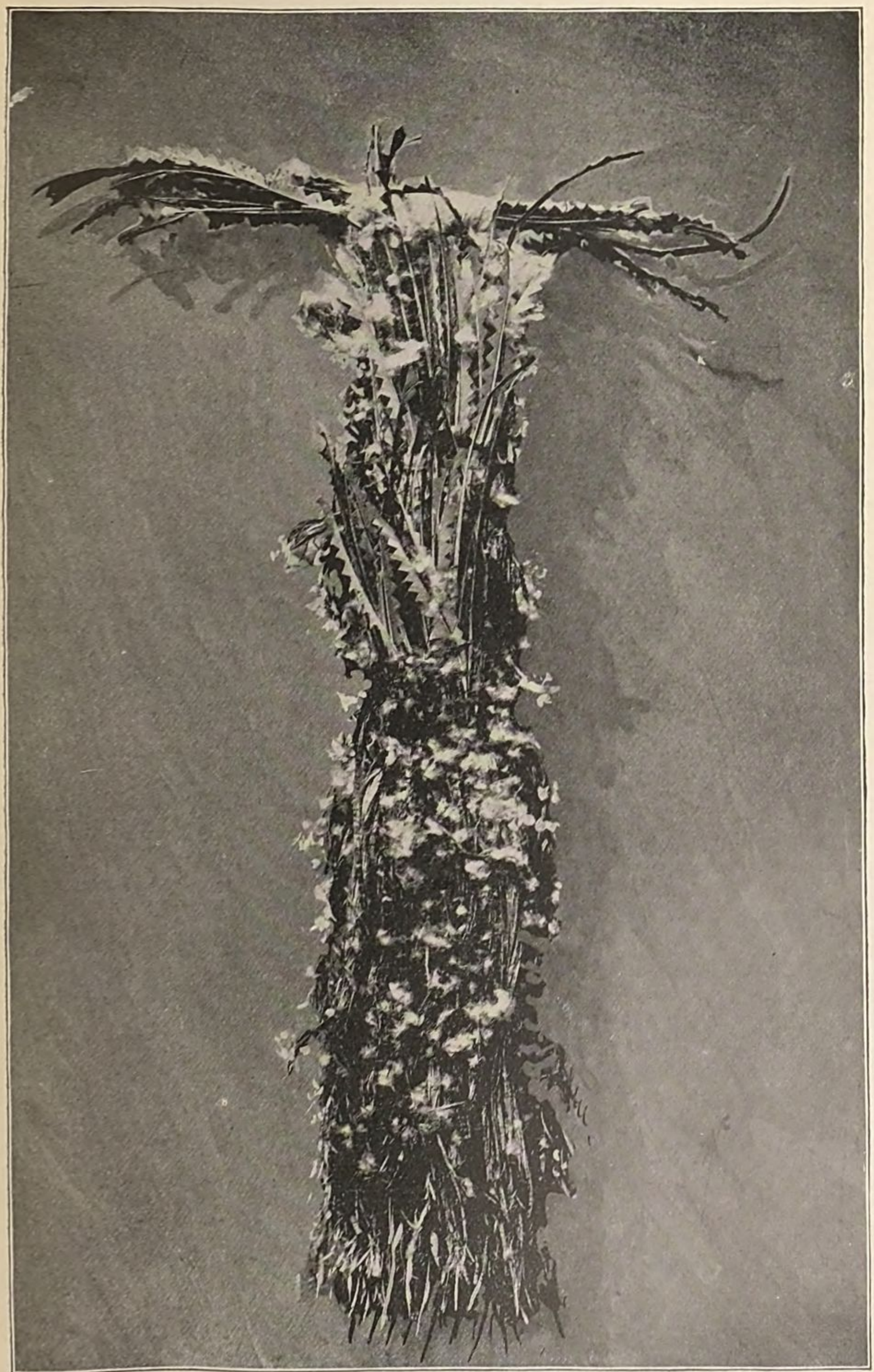
HEAD RING OF THE TSA'YĒQ.

Neeah Bay.

Cat. No. 4776, U. S. N. M. Collected by J. G. Swan.

When dancing, they hold the first fingers of both hands up, trembling violently. They enter all houses and take the patients and all the other people who desire to become members of the tsa'yēq along, two members of the society taking each novice between them and holding him by his hair, while they continue to shake their free hands. The novice must incline his head forward and shake it while the society are continuing their circuit. Thus they go from house to house, and all those who desire to become members of the society join the procession. The circuit finished, they assemble in a house in which during the following days none but members of the tsa'yēq are allowed. They sing and dance for four days. After these days the novice obtains his cedar bark ornament (fig. 199 and Plate 51). Small carvings representing the crest of his sept are attached to the front part of the head ring. The dress of the uctā'qyū, the shaman, who is the most important member of the society, is larger than that of the other members.

[1] Appendix, page 733.



HEAD RING OF THE TSA'YĒQ, ALBERNI.

Museum of the Geological Survey of Canada, Ottawa. Collected by F. Boas.

Swan[1] has described the ceremony as follows:

The other performance is termed Tsiahk, and is a medicine performance, quite as interesting, but not as savage in its detail. It is only occasionally performed, when some person, either a chief or a member of his family, is sick. The Makahs believe in the existence of a supernatural being, who is represented to be an Indian of a dwarfish size, with long hair of a yellowish color flowing down his back and covering his shoulders. From his head grow four perpendicular horns, two at the temple and two back of the ears. When people are sick of any chronic complaint and much debilitated, they imagine they see this being in the night, who promises relief if the ceremonies he prescribes are well performed. The principal performer is a doctor, whose duties are to manipulate the patient, who is first initiated by secret rites into the mysteries of the ceremony. What these secret rites consist of I have not ascertained, but there is a continual singing and drumming during the day and evening for three days before spectators are admitted. From the haggard and feeble appearance of some patients I have seen, I judge the ordeal must have been severe. The peculiarity of this ceremony consists in the dress worn alike by patients, novitiates, and performers. Both men and women assist, but the proportion of females is greater than of males. On the head of the female performer is worn a sort of coronet made of bark, surmounted by four upright bunches or little pillars made of bark wound round with the same material, and sometimes threads from red blankets, to give a variety of color. From the top of each of the four pillars, which represent the horns of the tsiahk, are bunches of eagles' quills, which have been notched and one side of the feather edge stripped off. In front is a band which is variously decorated, according to the taste of the wearer, with beads, brass buttons, or any trinkets they may have. From each side of this band project bunches of quills similar to those on the top of the head. The long hair of the tsiahk is represented by a heavy and thick fringe of bark, which covers the back and shoulders to the elbow. Necklaces composed of a great many strings of beads of all sizes and colors, and strung in various forms, are also worn, and serve to add to the effect of the costume. The paint for the face is red for the forehead and for the lower part, from the root of the nose to the ears; the portion between the forehead and the lower part is black, with two or three red marks on each cheek. The dress of the novitiate females is similar, with the exception of there being no feathers or ornaments on the bark headdress, and with the addition of black or blue stripes on the red paint covering the forehead and lower portion of the face. The headdress of the men consists of a circular band of bark and colored worsted, from the back part of which are two bunches of bark, like horses' tails. Two upright sticks are fastened to the band behind the ears, and on top of these sticks are two white feathers tipped with red; the quill portion is inserted into a piece of elder stick with the pith extracted and then put on the band sticks. These sockets give the feathers the charm of vibrating as the wearer moves his head; when dancing or moving in procession, the hands are raised as high as the face and the fingers spread out.

The doctor or principal performer has on his head a dress of plain bark similar to the female novitiate. He is naked except a piece of blanket about his loins, and his body is covered with stripes of red paint. The outdoor performance consists of a procession which moves from the lodge to the beach; the principal actor or conductor being at the head, followed by all the males in single file, the last one being the doctor. Immediately behind the doctor the patient follows, supported on each side by a female assistant. The females close up the procession. All parties, male and female, have their hands raised as high as their faces, and the motion of the procession is a sort of shuffling dance. They move in a circle which gradually closes around the patient, who, with the novitiate, is left seated on the ground in the centre; songs with choruses by the whole of the spectators, drumming, shaking rattles, and firing of guns wind up the performance, and all retire to the lodge, where

[1] "The Indians of Cape Flattery," page 73.

dancing and singing are kept up for several days. Finally, presents are distributed, a feast is held, and the friends retire. The patient and novitiates are obliged to wear their dress for one month. It consists of the bark headdress, having instead of feathers, two thin strips of wood, feather-shaped, but differently painted. Those of the patient are red at each end and white in the center, with narrow transverse bars of blue. Those of the novitiate have blue ends and the center unpainted. The patient's face is painted red, with perpendicular marks of blue on the forehead and the lower part of the face. The novitiate's forehead and lower portion of face is painted with alternate stripes of red and blue, the remainder of the face blue; the head band is also wound with blue yarn and yellow bark. The head band of the patient is wound with red. The tails of bark of both headdresses are dyed red. The patient carries in his hand a staff which can be used as a support while walking; this has red bark tied at each end and around the middle.

The Dukwally and Tsiahk are the performances more frequently exhibited among the Makahs than any others, although they have several different ones. The ancient tama'nawas is termed Do-t'hlub or Do-t'hlum,[1] and was formerly the favorite one. But after they had learned the T'hūlkoots, or Thunder bird, they laid aside the Do-t'hlub, as its performance, from the great number of ceremonies, was attended with too much trouble and expense. The origin of the Do-t'hlub was, as stated to me by the Indians, in this manner: Many years ago an Indian, while fishing in deep water for codfish, hauled up on his hook an immense haliotis shell. He had scarcely got it into his canoe when he fell into a trance, which lasted a few minutes, and on his recovery he commenced paddling home, but before reaching land he had several of these trances, and on reaching the shore his friends took him up for dead, and carried him into his house, where he presently recovered, and stated that while in the state of stupor he had a vision of Do-t'hlub, one of their mythological beings, and that he must be dressed as Do-t'hlub was and then he would have revelations. He described the appearance, as he saw it in his vision, in which Do-t'hlub presented himself with hands like deer's feet. He was naked to his hips, around which was a petticoat of cedar bark dyed red, which reached to his knees. His body and arms were red; his face painted red and black; his hair tied up in bunches with cedar twigs, and cedar twigs reaching down his back. When his friends had dressed him according to his direction, he fell into another trance, in which he saw the dances which were to be performed, heard the songs which were to be sung, and learned all the secret ceremonies to be observed. It was also revealed that each performer must have a piece of the haliotis shell in his nose, and pieces in his ears. He taught the rites to certain of his friends, and then performed before the tribe, who were so well pleased that they adopted the ceremony as their tama'nawas, and retained its observance for many years, till it was superseded by the Dukwally. The haliotis shell worn by the Makahs in their noses is a custom originating from the Do-t'hlub. Other ceremonies are occasionally gone through with, but the description above given will serve to illustrate all those observed by the Makahs. Different tribes have some peculiar to themselves, the general character of which is, however, the same. It will be seen that the public part of these performances are rather in the nature of amusements akin to our theatrical pantomimes than of religious observances, though they are religiously observed.

THE LKU'ÑGEN.

My information on the ceremonials of the Coast Salish is very meager. I obtained the following information from the Lku'ñgEn, the tribe which occupies the territory near Victoria, British Columbia. They have two secret societies, the tcyiyī'wan and the xEnxanī'tEl (dog howlers).

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[1] This is clearly the Kwakiutl word nō'nLEm.

Any member of the tribe may join the tcyiyī′wan. When desiring to do so, he retires into the woods and stays there for some time, bathing in ponds and washing his body with cedar branches. The intending novice is called xausā′lokuL. Finally he dreams of the dance which he will perform and the song which he will sing. In his dream his soul is led all over the world by the spirit who gives him his dance and his song. Then he returns to the village. According to what he has dreamed, he belongs to one of five societies which constitute the tcyiyī′wan: (1) The sqē′iep, who dance with elbows pressed close to the body, the arms extended forward and moving up and down; (2) the nuxsoā′wēqa, who jump about in wild movements; (3) the sqä′qoaL, who dance in slow movements; (4) the sq̇ôiē′lec, whose dance is said to be similar to that of the sqē′iep, and (5) the tcîlqtE′ñEñ (derived from tcâ′loq woods). The general name of the dances of the tcyiyī′wan is mē′iLa, which word is borrowed from the Kwakiutl. When the novice returns from the woods, he teaches for two days his song to the members of the society to which he is to belong. Then the dance is performed and henceforth he is a regular member of the society.

The xEnxanī′tEl, the second society, are also called Lō′koala and nō′nLEm, although the first name is the proper Lku′ñgEn term. The Lku′ñgEn state that they obtained the secrets of this society from the Nootka, and this is undoubtedly true. It appears that the secrets of these societies spread from the Nootka to the Lku′ñgEn, Clallam, and the tribes of Puget Sound. The Tc'â′tELp, a sept of the Sanitch tribe, also have the nō′nLEm, while the Snanai′muX, the Cowichan, and the tribes of Fraser River have hardly a trace of it. The Comox and Pentlatch obtained it through intermarriage with both the Kwakiutl and the Nootka.

The right to perform the nō′nLEm is jealously guarded by all tribes who possess it, and many a war has been waged against tribes who illegitimately performed the ceremonies of the society. Its mysteries were kept a profound secret, and if a man dared to speak about it he was torn to pieces by the quqq'ē′lEñ, about whom I shall speak presently. Only rich people can become members of the xEnxanī′tEl, as heavy payments are exacted at the initiation. If the father of the novice is not able to pay them, his relatives must contribute to the amount required. The initiation and the festivals of this society take place in winter only. When a young man is to be initiated, his father first invites the xEnxanī′tEl to a feast, which lasts five days. During these days mask dances are performed, which those who are not members of the society are also permitted to witness. They occupy one side of the house in which the festivities take place, while the xEnxanī′tEl occupy the other. The latter wear head ornaments of cedar bark and have their hair strewn with down. The faces of all those who take part in the festival are blackened. At the end of three days the father of the novice invites four men to bathe his son in the sea.

One of them must wash his body, one must wash his head, and the two others hold him. In return they receive one or two blankets each. During this ceremony the quqq'ē'lEñ, who are described as wild men, dance around the novice. They have ropes tied around their waists, and are held by other members of the society by these ropes. Then the xEnxanī'tEl lead the novice into the woods, where he remains for a long time, until he meets the spirit that initiates him. It seems that during this time he is secretly led to the house in which the xEnxanī'tEl continue to celebrate festivals at the expense of the novice's father, and there he is taught the secrets of the society. During this time, until the return of the novice from the woods, the house is tabooed. A watchman is stationed at the entrance, who keeps out uninitiated persons. During the absence of the novice, his mother prepares cedar bark ornaments and weaves mountain goat blankets for his use. One afternoon he returns, and then his father gives a feast to let the people know that his child has returned. The latter performs his first dance, in which he uses masks and cedar bark ornaments. This dance is called nuxnEä'mEñ. On this day the father must distribute a great number of blankets among the xEnxanī'tEl. The initiated are permitted to take part in the feast, and sit on one side of the house. The new member spends all his nights in the woods, where he bathes. In the spring the new member, if a man, is thrown into the sea, and after that is free from all regulations attending the initiation. One of the principal regulations regarding novices of the xEnxanī'tEl is that they must return from the woods in the direction in which the sun is moving, starting so that the sun is at their backs. Therefore they must sometimes go in roundabout ways. They must go backward through doors, which are sLā'lEqam (supernatural) against them. Frequently the siō'ua (a female shaman) is called to bespeak the door in their behalf before they pass through it. Before their dance the siō'ua must also address the earth, as it is supposed that else it might open and swallow up the dancer. It is also sLā'lEqam against the novice. The expression used is that the earth would "open its eyes" (k'u'nalasEn); that means, swallow the novice. In order to avert this danger, the siō'ua must "give a name to the earth," and strew red paint and feathers over the place where the novice is to dance.

THE BÎ'LXULA.

The social organization, festivals, and secret societies of the Bî'lxula are still more closely interrelated than they are among the Kwakiutl, and must be considered in connection. We have to describe here the potlatch, the sisau'k·, and the kū'siut. The sisau'k· corresponds to the Laō'laxa of the northern Kwakiutl tribes, the kū'siut to the ts'ē'ts'aēqa. The Bî'lxula believe that the potlatch has been instituted by ten deities, nine brothers and one sister, the foremost among whom is Xē'mtsioa, to whose care the sunrise is intrusted. He resides with the others in a beautiful house in the far east, and cries "ō, ō,"

every morning when the sun rises. He takes care that he rises properly. The first six of these deities are grouped in pairs, and are believed to paint their faces with designs representing moon, stars, and rainbow. In the kū′siut these deities make their appearance, and are represented by masks. Xē′mtsioa and Xēmxēmalâ′oLa wear the design of the full moon, indicated on the mask of Xē′mtsioa by a double curved line in red and black, the black outside, passing over forehead, cheeks, and upper lip. Xēmxēmalâ′oLa has a double curved line in red and black, the red outside, which passes over forehead, cheeks, and chin. Aiumkī′lik·a and Aiumalâ′oLa wear the design of the crescent, drawn in red and black, with differences similar to those between the first and second masks. The fifth Q'ōmq'ōmkī′lik·a and Q'ō′mtsīoa have designs representing stars, both wearing the same style of mask. The seventh is Qula′xawa, whose face represents the blossom of a salmon-berry bush. The next in order, Kulē′lias (who wants to have blankets first), wears the design of the rainbow in black and blue. The ninth, A†'amā′k, wears on the head a mask representing a kingfisher, and is clothed in a bird-skin blanket. The last of the series is a woman called L'ētsā′aplēLāna (the eater), the sister of the others. Her face is painted with the design of a bladder filled with grease. She figures in several legends as stealing provisions and pursued by the people whom she has robbed.

The sisau′k·, which is danced at potlatches and other festivals of the clans, is presided over by a being that lives in the sun. A man who had gone out hunting met the sisau′k· and was instructed by him in the secrets of the dance. When he returned, he asked the people to clean their houses and to strew them with clean sand before he consented to enter. Then he danced the sisau′k· and told the people what he had seen. He said that the being had commanded them to perform this dance and to adorn themselves when dancing with carved headdresses with trails of ermine skins, and to swing carved rattles. The man, later on, returned to the sun. Ever since that time the Bî′lxula dance the sisau′k·. Besides this, it is stated that the raven gave each clan its secrets. Each clan has its peculiar carvings, which are used in the sisau′k· only, and are otherwise kept a profound secret, i. e., they are the sacred possessions of each clan. All clans, however, wear the beautiful carved headdresses and use the raven rattles, regardless of the carving they represent. Every time the sacred objects of a clan are shown to the people a potlatch is given. The sacred objects, although the property of the various clans, must nevertheless be acquired by each individual—that is to say, every free person has the right to acquire a certain group of carvings and names, according to the clan to which he or she belongs. Slaves and slaves' children, also illegitimate children, can not become sisau′k·. A person can not take a new carving, but must wait until it is given to him by his relatives—father, mother, or elder brother. Nusk'Elu′sta, the Indian, to whom I

owe my information regarding the clans, and who is a member of the gens Ialô'stimōt of the Taliô'mx·, stated that he had received the raven when he gave his first potlatch. At his second potlatch he received the eagle. He hoped that his mother would give him the whale at his next potlatch, and would at the same time divulge to him the secrets connected with it. In course of time, he said, he might get even others from his brother; but if the latter's children should prove to be very good, and develop very rapidly, his brother would probably give his secrets to his own children. At festivals, when a person acquires a new secret, he changes his name. Each person has two names, a kū'siut name, which remains through life, and a Xē'mtsioa name, which is changed at these festivals. Thus, Nusk'Elu'sta's (which is his kū'siut name) Xē'mtsioa name was AL'ILEMNE'lus'aix·, but at his next potlatch he intended to take the name of Kaliā'kîs. These names are also the property of the various clans, each clan having its own names. When a man possesses several sisau'k· secrets, he will distribute them among his children. When a girl marries, her father or mother may, after a child has been born to her, give one or several of their sisau'k· secrets to her husband, as his children make him a member of her clan. When a person grows old, he gives away all his sisau'k· secrets. After any secret has been given away the giver must not use it any more. The crest and the sisau'k· carvings must not be loaned to others, but each person must keep his own carvings. The only exceptions are the carved headdresses and the raven rattles, which are not the property of any particular clan.

The laws regarding the potlatch are similar to those of the Kwakiutl. The receiver of a present becomes the debtor of the person who gave the potlatch. If the latter should die, the debts become due to his heirs. If the debtor should die, his heirs become responsible for the debt. Property is also destroyed at potlatches. This is not returned, and serves only to enhance the social position of the individual who performed this act. It is not necessary that all the property given by a person in a potlatch should be owned by him. He may borrow part of it from his friends, and has to repay it with interest. I was told, for instance, that a man borrowed a large copper plate and burnt it at a potlatch. When doing so, he had to name the price which he was going to pay the owner in its stead. Since that feast he died, and his heirs are now responsible for the amount named at the potlatch.

The kū'siut is presided over by a female spirit, called Anaūlikuts'ai'x·. Her abode is a cave in the woods, which she keeps shut from February till October, remaining all the while inside. In October she opens the door of her cave and sits in front of it. A woman is said to have been the first to find her. Anaūlikuts'ai'x· invited her into her cave and taught her the secrets of the kū'siut. She wore ornaments of red cedar bark around her head, waist, and ankles; her face was blackened, her hair strewn with eagle down. She commanded the

woman to dance in the same way as she saw her dancing. The people should accompany her dance with songs, and, after she had finished, they should dance with masks. She said, "Whenever a person sees me, your people shall dance the kū'siut. If you do not do so, I shall punish you with death and sickness. In summer, while I am in my house, you must not dance the kū'siut."

Ever since that time the Bi'lxula dance the kū'siut. When a man has seen Anaūlikuts'ai'x· sitting in front of her cave, he will invite the people to a kū'siut. A ring made of red and white cedar bark is hung up in his house, and the uninitiated are not allowed to enter it. Only in the evening, when dances are performed, they may look on, standing close to the door. As soon as the dances are over, they must retire from the taboo house. Each kū'siut lasts three days.

The various dances performed by members of the kū'siut are also property of the clans, and the right to perform them is restricted to members of the clan. They must not be given to a daughter's husband, as is the case with the sisau'k· dances, but belong to the members of the clan, who have a right to a particular dance, but who do not own it. Permission to use a mask or dance is obtained from the owner by payments. The owner may reclaim the dance or the borrower may return it at any time. Membership of the kū'siut is obtained through an initiation. At this time the novice is given his kū'siut name, which is inherited by young persons from their parents or from other relatives. Thus a young man who had the name of Pō'pō until he was about seventeen years old, obtained at his initiation the name of L'akō'oL. I have not reached a very clear understanding of the details of the initiation; it seems that the dance is simply given to the novice in the same way as the sisau'k·, this initiation being connected with a potlatch. But still it seems possible that he must "dream" of the dance which he is to perform. Only the highest degrees of the kū'siut have to pass through a religious ceremony of some importance. The highest degrees are the Elaxō'La (the hā'mats'a of the Kwakiutl), the ō'lEx (the nū'LmaL of the Kwakiutl), and the dā'tia (the nō'ntsistalaL of the Kwakiutl). These grades are also hereditary. A kū'siut novice may acquire them at once at his first initiation.

When the Elaxō'La is initiated, he goes into the forest, where he encounters his guardian spirit. It is believed that he goes up to the sun, and formerly he had to take human flesh along for food. The chiefs held a council the night preceding the beginning of the ceremonies, and anyone who wanted to show his liberality offered one of his slaves to be killed in order to serve as food for the Elaxō'La. The offer was accepted, and a payment of from ten to twenty blankets was made for the slave. The latter was killed, and the members of the Elaxō'La order devoured one-half of the body before the departure of the novice to the woods. There the latter was tied up and left to fast. He may stay there for twenty or thirty days until the spirit appears

to him and takes him up to the sun, where he is initiated. Early one morning he returns, and is heard outside the houses. He has lost all his hair, which, it is believed, has been torn out by the strong breeze blowing in the higher regions. He is quite naked, and bites everyone whom he can lay hold of. If he can not catch anyone he will bite his own arm. It is believed that he has lost his soul, which fled from the body when the spirit came to him. Therefore the shamans must try for four days to recapture his soul. The night after they have recovered it the Elaxō'La dances, clothed in a bearskin and wearing a large head ring, heavy bracelets and anklets, all made of red cedar bark. Sometimes he appears wearing the mask of the S'ā'Lpsta (fig. 200), the spirit which initiated him. This mask corresponds exactly to that of BaxbakuālanuXsī'waē of the Kwakiutl. Some Elaxō'La do not bite people, but merely devour raw salmon or tear dogs to pieces and devour them. Those who bite people will also devour corpses. The Elaxō'La has to observe a number of regulations. For four years after his initiation he must not gamble. He must stay away from his wife for one year, but this period is being reduced to one month. For two or three months he must not leave his house.

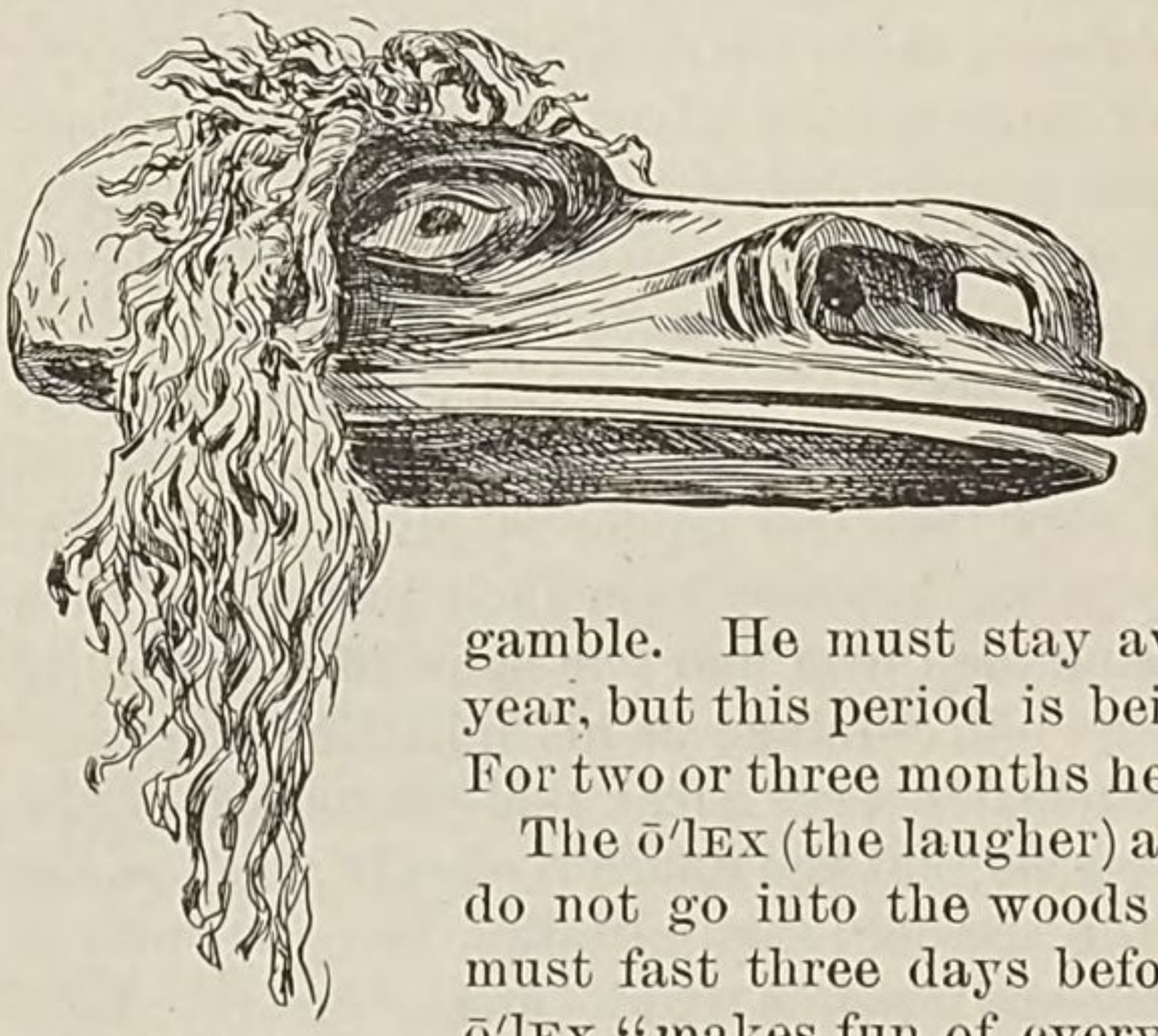

Fig. 200.

MASK OF THE S'Ā'LPSTA.
Bi'lxula.
Cat. No. 129509, U. S. N. M.
Collected by F. Boas.

The ō'lEx (the laugher) and the dā'tia (the thrower) do not go into the woods to be initiated, but both must fast three days before their first dance. The ō'lEx "makes fun of everything" and scratches people with his nails. The dā'tia carries stones and sticks and breaks household goods and canoes. If he has destroyed some object during the day, he pays for it at night when he dances. The ō'lEx and the dā'tia, after they have danced, must stay in their houses for one month.

If a person transgresses the laws of the kū'siut, for instance, when the Elaxō'La gambles, or when a man performs a dance to which he has no right, also when a person derides the ceremonies or makes a mistake in dancing, his punishment is death. The chiefs assemble in council and the offender is called before the court. After his offense has been proved, he is asked whether he is willing to suffer the penalty of death. If he is not willing and one of his relatives is found willing to take the penalty on himself, the guilty party is spared and the substitute killed in his stead. The execution of the judgment is intrusted to the shaman, who bewitches the condemned person by throwing disease into him or by poisoning him in some other (supernatural?) way. The object thrown by the shaman is a shell, bone, or finger nail, around

the middle of which objects a human hair is tied. If this object strikes the offender, he will fall sick. Blood is believed to collect in his stomach, and if it so happens that he vomits this blood, and with it the disease-producing object, he will recover, and is not molested any further. The masks (not the whistles and other ornaments) used in the kū′siut are burnt immediately at the close of each dancing season. Novices must wear a necklace of red cedar bark over their blankets for a whole year. The masks used in the dances represent mythical personages, and the dances are pantomimic representations of myths. Among others, the thunder bird and his servant, ALxulā′tEnum (who wears a mask with red and blue stripes over the whole face from the right-hand upper side to the left-hand lower side, and carries a staff with red and blue spiral lines), appear in the dances. Prominent masks are also Xē′mtsioa and his brothers and his sisters; Masmasalā′nix and his fellows, the raven and the nusxē′mta, and many others.[1]

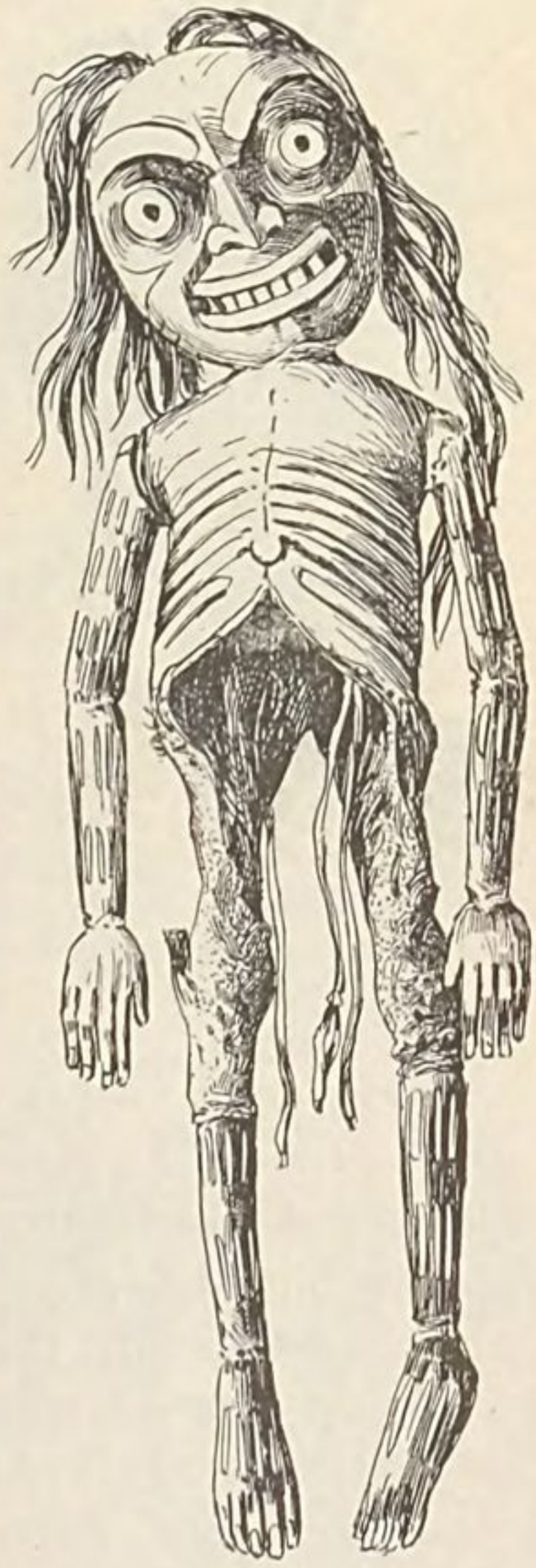

Fig. 201.

HEADDRESS OF ĞLALA′.

Haida.

Cat. No. 89038, U. S. N. M. Collected by J. G. Swan.

THE TSIMSHIAN, NÎSQA′, HAIDA, AND TLINGIT.

The tribes of this group learned the ceremonial avowedly from the Hē′iltsuq. Although I have not witnessed any part of their ceremonials, the descriptions which I received bring out with sufficient clearness its similarities to the winter ceremonial of the Kwakiutl. The ceremonials seem to be almost identical among all these tribes. It is most complete among the southwestern Tsimshian tribes, particularly the G·itxā′La, but has been adopted by all the tribes of the coast. It is said that it reached the Haida not more than a hundred years ago.

I will tell here what I learned from the Nîsqa′. They have six societies, which rank in the following order: The sEmhalai′t, mēiLa′, lōLE′m, ōlala′, nanēstā′t, hōnana′L, the last being the highest. The sEmhalai′t is really not confined to the winter ceremonial, but is obtained when a person acquires the first guardian spirit of his clan and performs the ceremony belonging to this event. The tradition of the origin of these ceremonies localizes the events at Bellabella, and it

[1] See "Indianische Sagen von der Nord-Pacifischen Küste Amerikas," page 241, by F. Boas.

is added that the G·itxā′La, after having acquired the ceremonial from the Hē′iltsuq, transmitted it to the Nîsqa′. This report is corroborated by linguistic evidence. All the names of the societies, with the sole exception of the first, are of Kwakiutl derivation. (mēiLa′, teasing; lōLE′m, Kwakiutl nō′nLEm; ōlala′, name of a Kwakiutl dance; nānestā′t, Kwakiutl nōntsistā′laL; hōnana′, dance of ————). The cry of the ōlala′, "hāp," is also a Kwakiutl word meaning eating, and is the same as the cry of the hā′mats'a. The original tradition mentions three societies only—the second, third, and fourth. This shows that the first one is not a secret society, properly speaking, and that the fifth and sixth are later importations. The Nîsqa′ state that with the ceremonies came the use of large whistles. I will give the Nîsqa′ tradition of the origin of the secret societies:

Fig. 202.

PART OF A HEADDRESS REPRESENTING THE ŌLALA′.

Haida.

Cat. No. 89072, U. S. N. M. Collected by J. G. Swan.

A Wutsda′ (Hē′iltsuq), named Saʒaitlā′ben (a Nîsqa′ or Tsimshian name), went hunting. He saw a bear, which he pursued. He shot it several times, but was unable to kill it. Finally the bear reached a steep cliff, which opened and let him in. When the rock opened, the hunter heard the voices of the ōlala′ crying "hāp," and he fainted. Then his soul was taken into the house. In the rear of the house he saw a large room partitioned off. The partition was hung with red cedar bark. It was the secret room of the ōlala′. To the right of the door, on entering, was a secret room for the mēiLa′, and to the left of the door one for the lōLE′m. The chief, who was sitting in the rear of the house, ordered a fire to be made, and spoke: "Those here are the mēiLa′; they did not bring you here. Those are the lōLe′m; they eat dogs; they did not bring you here. But these are the ōlala′; they eat men; they brought you here. You shall imitate what they are doing." The chief had a heavy ring of red cedar bark around his neck, a ring of the same material on his head, and wore a bearskin. He said: "You must use the same ornaments when you return to your people." He took a whistle out of his own mouth and gave it to Saʒaitlā′bEn. He gave him his small neck ring of cedar bark, which

Fig. 203.

PART OF A HEADDRESS REPRESENTING THE OLALA′.

Haida.

Cat. No. 89073, U.S. N. M. Collected by J. G. Swan.

instilled into him the desire of devouring men (therefore it is called q'âtsx Em lōx·, cedar bark throat), and he gave him large cedar bark rings and a small bearskin, which enabled him to fly. He told him: "You shall kill men, you shall eat them, and carry them to my house." And he opened the door. The singers sang and beat time, and Saßaitlā'bEn flew away. He flew from town to town over the whole world, crying "hāp" all the time. He went from the country of the Wutsda' to Skeena River, and then to Nass River. Sometimes he was seen on high cliffs. He killed and devoured people whom he found in the woods.

After three years he was seen near the village of the G·it'amā't. They attempted to catch him. They killed dogs and threw them into a hole, and a number of shamans hid under a canoe near by. Soon he was heard to approach. He alighted on the top of a dry cedar. He lay there on his stomach, and the point of the tree was seen to penetrate his body and to pierce it. But it did not kill him. When he saw the dead dogs, he flew down, and after he had eaten, the shamans rushed up to him, caught him, and took him up to the house. They tried to cure him, and the people sang ōlala' songs (all of which have a five-part rhythm). He tried to fly again, but was unable to get out of the house. Finally he was tamed and became like other men. Then the G·it'amā't took him back to his friends and received in return many slaves, coppers, and canoes.

Fig. 204.

WOOD CARVING REPRESENTING THE ŌLALA'.

Haida.

Cat. No. 89039, U.S.N.M. Collected by J. G. Swan.

The ceremonies take place in the month called Lôk·s Em gunä'k (cold month, or December).

In his dances the ōlala' of all the northern tribes use headdresses which represent a corpse (figs. 201–204). The whistles which are used to imitate the cries of the spirit are large and give a deep, hollow sound. They are all carved or painted with the design of the head of a corpse, either with hollow orbits or with closed eyes. Some of these whistles (figs. 205–207) are attached to bellows. They are carried under the arms, hidden by the blankets, and thus blown without being seen. The rattles which are carried by the companions of the dancer show also the same design.

The lōLE′m dance in a two-part rhythm; their call is a sharp "h, h;" their movements sudden jerks of the forearms, first the left moving up to the shoulder while the right moves down, and *vice versa*.

Fig. 205.
ŌLALA′ WHISTLE.
Haida.
Cat. No. 89062, U. S. N. M. Collected by J. G. Swan.

The mēiLa′ dance in a three-part rhythm. Their headdress is a heavy ring of red cedar bark, with a beaver tail standing up in its middle. The ring is studded with small sticks, which represent arrows (fig. 208).

The nānestā′t and hōnanā′L correspond to the nō′ntsistālaL of the Kwakiutl. When the members of these societies are in a state of ecstasy, they throw firebrands about and destroy canoes, houses, and anything they can lay their hands on. They carry lances like the nū′LmaL. The rattles used by all these societies are round, and correspond to those of the Kwakiutl (figs. 209–213).

Fig. 206.
ŌLALA′ WHISTLE.
Haida.
Ca . No. 89158, U. S. N. M. Collected by J. G. Swan.

The insignia of these societies are made of cedar bark dyed red in a decoction of alder bark. For each repetition of the ceremony a new ring is added to the head ornament of the dancer. Those of the lōLE′m and ōlala′ consist of rings placed one on top of the other. The mēiLa′ receives first a red ring, the second time a white ring, and so on, alternating. His rings are twisted together.

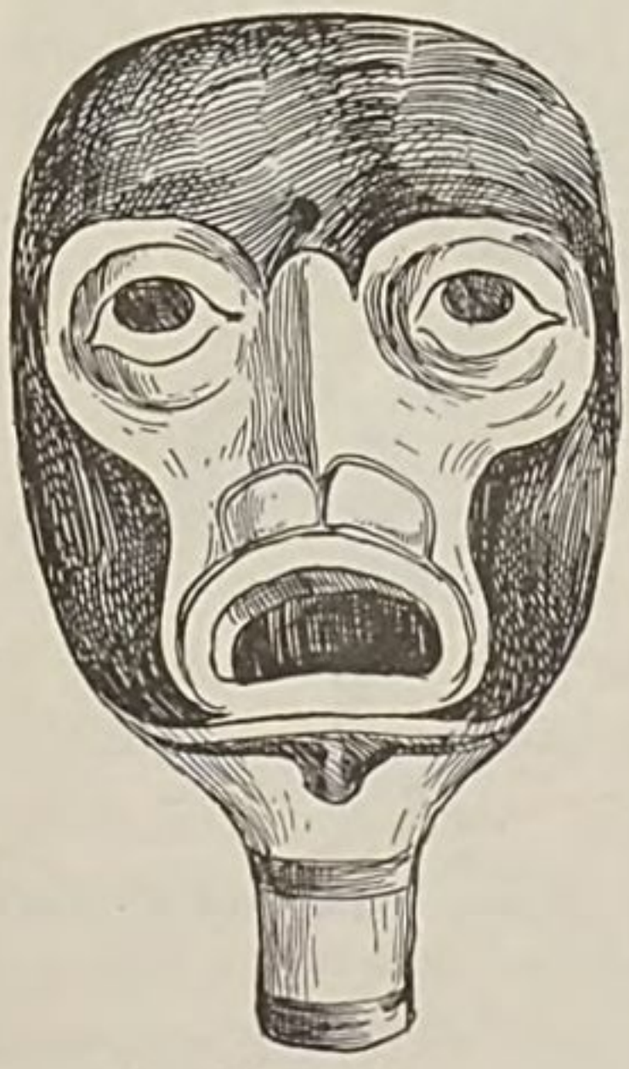

Fig. 207.
ŌLALA′ WHISTLE.
Haida.
Cat. No. 89063, U. S. N. M. Collected by J. G. Swan.

There are only a limited number of places in the societies, and a new member can be admitted only when he inherits the place of a deceased member, or when a member transfers his place to him. If such a transfer is to take place, the consent of the chiefs of the clans must first be obtained. Then one evening the chiefs, during a feast, surround the youth and act as though they had caught the spirit of the society in their hands and throw it upon the novice. If

he is to be a lōLE′m, a noise, "hôñ, hôñ," is heard on the roof of the house, and the youth faints. The lōLE′m (or the members of the society in which he is to be initiated) are called to investigate why the youth fainted. They enter singing, their heads covered with down. They place him on an elk skin, carry him around the fire, then they throw the youth upward and show the people that he has vanished. After some time, when the novice is expected back, the people assemble in the house, and all the members of the nobility try to bring him

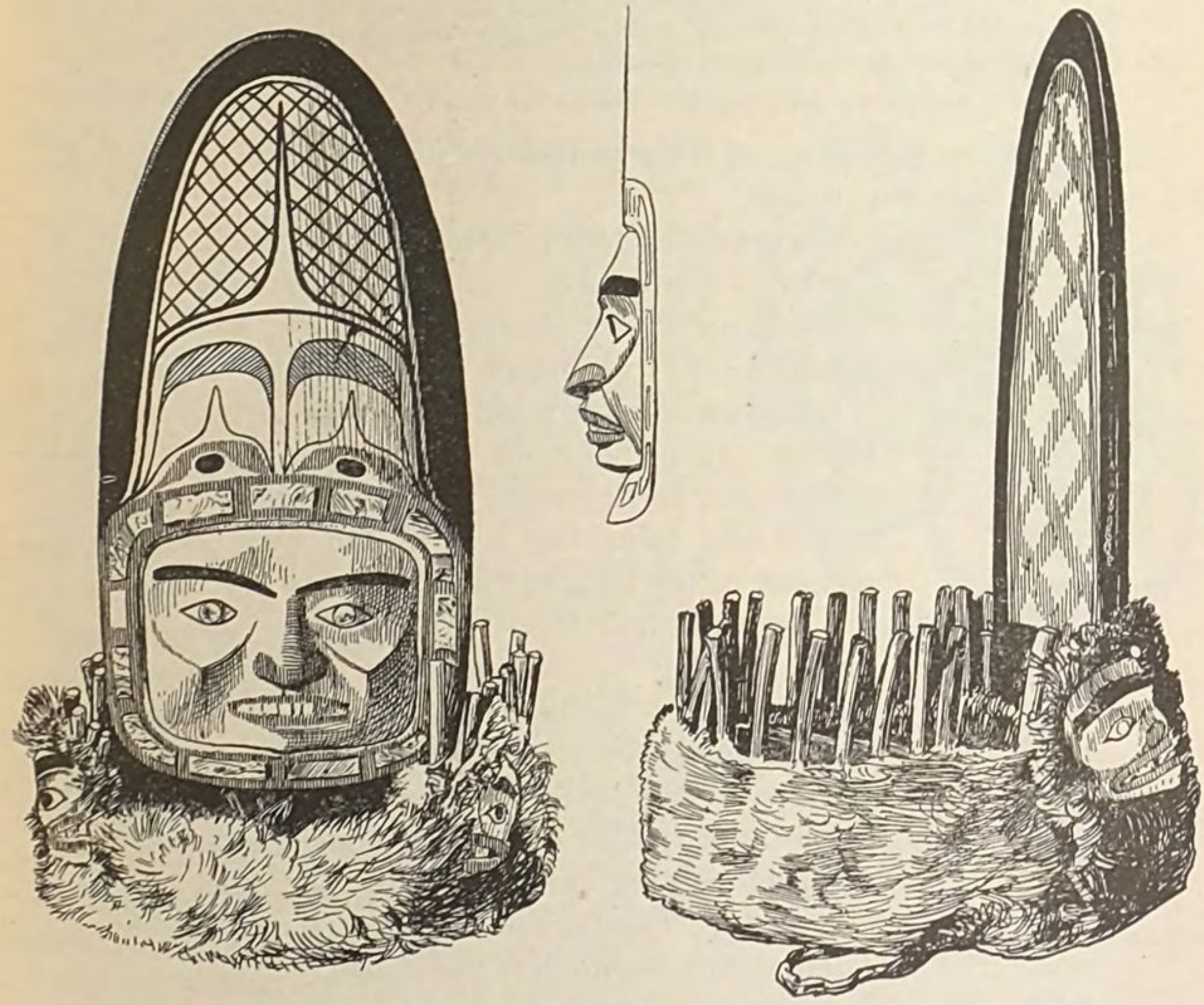

Fig. 208.

HEAD RING OF MĒ′ILA.

Tsimshian.

Diameter of ring 8½ inches; height of carving 14 inches.

IV A, No. 1029, Royal Ethnographical Museum, Berlin. Collected by A. Jacobsen.

back by the help of their spirits. In order to do this, they dance w th the head ornaments of their clans, their rattles, dancing blankets, aprons, and leggings, or they use the head ornament representing two bears' ears, which is made of bearskin set with woman's hair, dyed red. This ornament is used by all clans, or they wear masks representing their guardian spirits.

As an example of these, I will describe the spirit of sleep, which belongs to the G·īspawaduwE′da. The owner of this spirit appears sleeping, his face covered with a mask, the eyes of which are shut (fig.

214, p. 659). Then a chief steps up and tries to awaken him by hauling the drowsiness out of him with both his hands. Then the eyes of the mask are opened and roll, while the man who wears the mask rises. The chief who took the drowsiness out of the sleeper asks if he shall try to put the people to sleep, and on being asked to do so he opens his hands. The spirit is supposed to enter the people, and all close their eyes. After some time he gathers the drowsiness again, and the people awake and sing:

Oh, how sleepy we are; oh, how sleepy we are,
When the heat of the heaven strikes me, drowsiness comes upon me,
brought by the husband of the sleep,
Oh, how sleepy we are; oh, how sleepy we are.[1]

In this manner the spirit of sleep proves his presence and is asked to try to bring back the novice.

Fig. 209.
RATTLE REPRESENTING THE BEAR.
Haida.
Cat. No. 20875, U. S. N. M. Collected by J. G. Swan.

Figure 215 (p. 660) shows another mask, which is used in a similar way. It represents the cold. The staring eyes, the chattering mouth, express the extreme cold from which the wearer is suffering.

One dancer after another tries to bring back the novice. If he does not return by midnight of the first night, the ceremony is interrupted, and continued the following night. On one occasion a member of the lōLE′m was the last to try. He took his supernatural helper, a small, carved human image, held it up, and asked it to bring back the novice. Then he poured a spoon of grease into the fire and threw the carving after it. At once the whistles of the novice were heard on the roof. All the lōLE′m rushed out of the house, but soon they returned, saying that they had seen him, but lost him again. They cried, "ē" (drawn out very long). Then all the people left the house.

After the novice is lost in this manner, he is expected back on the following day. Early in the morning a killer whale or some other animal is seen on the river, carrying the novice on its back. He is crying "mâ, mâ, mâ, mâ," all the time, and the people go to see him. The lōLE′m take a canoe and paddle singing toward the novice. When they have almost reached him, one of their number, who stays ashore clad in a bearskin, drives all the people into the houses. The lōLE′m take the novice into their canoe and destroy the whale float which carried him, and which is manipulated by means of ropes. Then he runs up and down the street like one wild, and the ōlala′ follow him and bite any of the profane who dare to leave the house. The novice catches a dog, tears it to pieces, and eats it while he is going from house to house.

[1] See Appendix, page 733.

When he thus returns, he is entirely naked. From the time when he enters his house it becomes tabooed. A rope hung with red cedar bark is stretched from the door of the house to a pole erected on the beach, preventing the people from passing in front of the house and compelling them to go behind. A large ring of red cedar bark is fastened to the pole in front of the house. These remain on the house for a day after the return of the novice. On the following day four men put on bearskins and place rings of red cedar bark on their heads. Thus attired, they go from house to house inviting the people to see the dance of the novice and to learn his songs. When the people have assembled, the uncle of the novice spreads blankets on the floor, on which the youth dances. Then his uncle pays the chiefs who tried to bring him back, and distributes blankets among the other people also. He gives a feast, in which two kinds of berries are served, each mixed with grease. Chiefs are given large spoons filled with grease. Their people help them to eat the contents, as they must not leave any of the food that they receive. After the ceremony the novice is called Laamg·a′t (a perfect man).

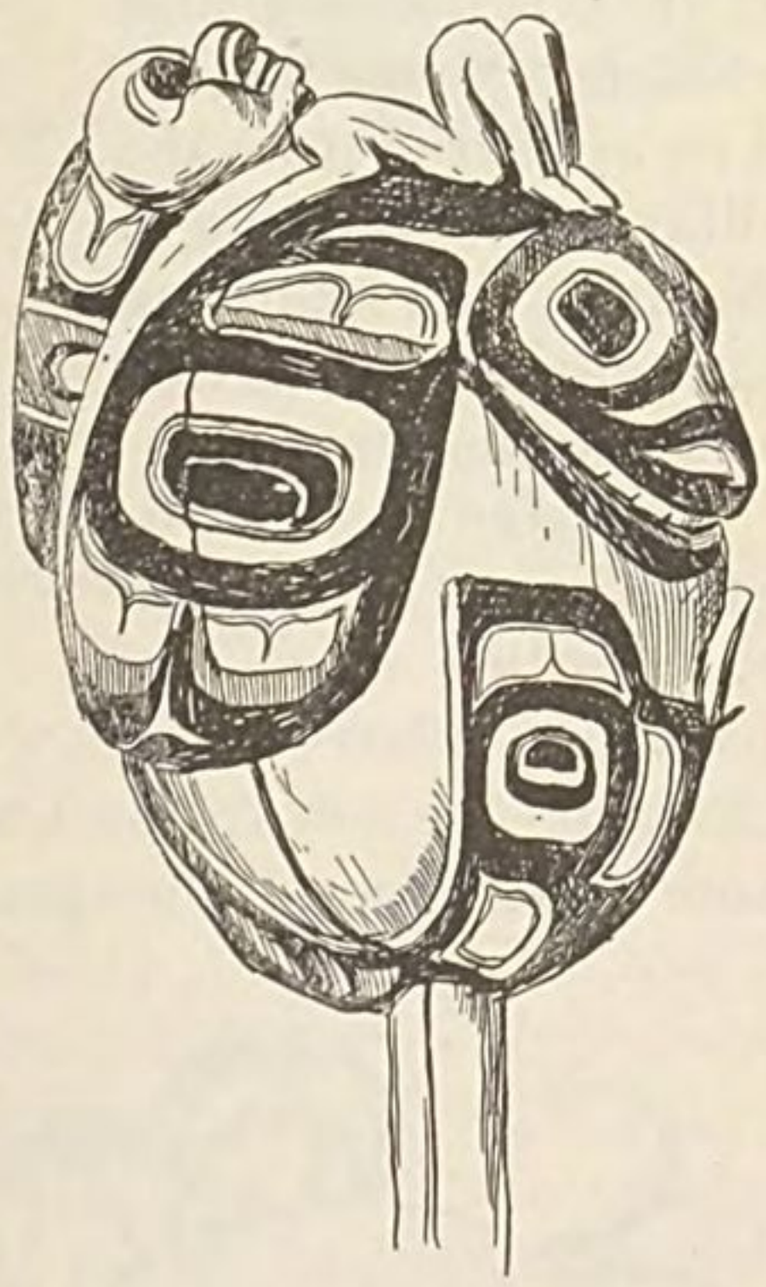

Fig. 210.

RATTLE WITH DESIGN REPRESENTING THE KILLER WHALE.

Haida.

Cat. No. 20584, U. S. N. M. Collected by J. G. Swan.

People who want to become members of the ōlala′ must have been shamans first.

The following description of the initiation of an ōlala′ was given by a man who had gone through the ceremony himself, but who is a Christian now. It is a question to my mind whether the ceremonies at the grave, about which he told me, were actually performed, or whether he reflected only the dread in which the ōlala′ were held.

During a festival when he was to be initiated, his friends pretended to begin a quarrel. They drew knives and pretended to kill him. They let him disappear, and cut off the head of a dummy, which had been skillfully introduced. Then they laid the body down, covered it, and the women began to mourn and to wail. His relatives gave a feast, distributed blankets, slaves, canoes, and coppers, and burnt the body. In short, they held a regular funeral.

After his disappearance, the young man resorted to a grave. He took the body out of the grave and wrapped the blanket about himself and the body. Thus he lay with the corpse for a whole night. The other ōlala′ watched him from a distance. In the morning he put the body back into the grave. He continued to do so for some time, in order to acquire courage. All this time and for a whole year after he was not seen by any member of the tribe except by the ōlala′.

A year after his disappearance, his nephew invited all the tribes to bring him back. This was done in the same manner as described above in the case of initiation of the lōLE′m. Finally his whistles were heard, and he appeared on the roof of the house crying "ā lalalalala!" He disappeared again, and in the following night, after prolonged dances, he was seen on the hills dancing in a fire, which he had built in such a manner that when he danced behind it he appeared from the village to be standing in the fire. The following day he appeared, carried by his totem animal.

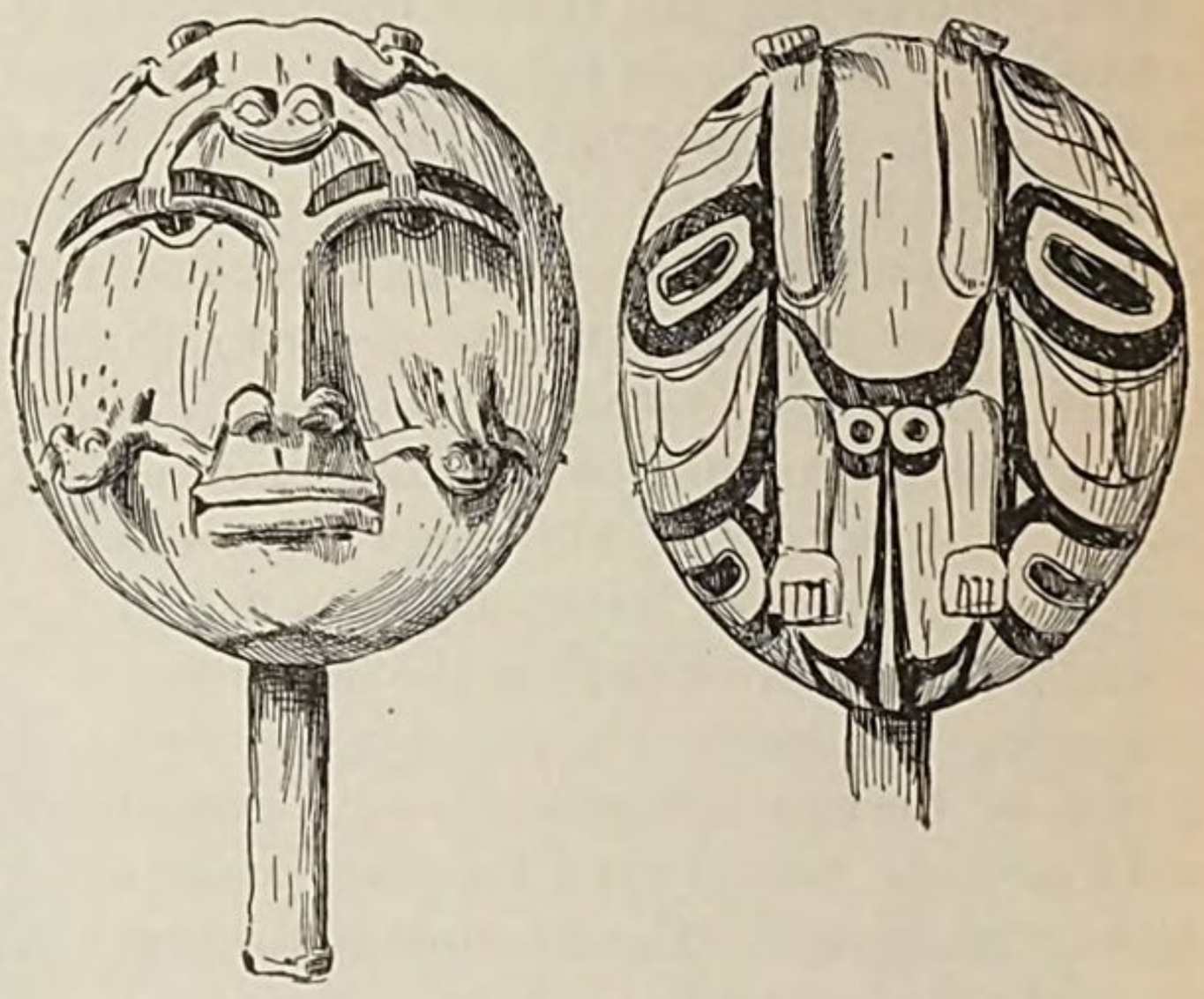

Fig. 211.
RATTLE.
Haida.
Cat. No. 20583, U. S. N. M. Collected by J. G. Swan.

The G·īspawaduwE′da are brought back by a killer whale, as described above; the Laxk·ebō′ by a bear, the Laxskī′yek on the back of an eagle which rises from underground, the Qanha′da on the back of a frog. Sometimes the novice appears on a point of land some distance from the village, carrying a corpse in his arms. Then he is said to walk over the surface of the water and to come ashore in front of the village. This is accomplished by means of a raft which is covered with planks, and burdened so that it floats a short distance under the surface of the water. It is pulled by means of a rope by some of the other ōlala′ while the novice is dancing on it, so that the impression is conveyed that he is approaching on the surface of the water. When he reaches the village, he eats of the body which he is carrying, and one or other of the chiefs kills a slave and throws the body to the ōlala′, who devour it. It is said that before eating human flesh the ōlala′ always use emetics, and that afterwards they tickle their throats with feathers to insure vomiting.

Fig. 212.
RATTLE.
Haida.
Cat. No. 88791, U. S. N. M. Collected by J. G. Swan.

In all feasts which take place during the dancing season the ōlala′ receives his share first, and nobody is allowed to eat until after he has

begun. He has a spoon and a dish of his own. These are wound with red cedar bark. Those who have formerly been ōlala′ are the servants of the new member of the society and bring him food. When he hears the word lō′lEk (ghost), he grows excited and begins to bite again. After he ceases to bite and to devour human flesh, a heavy ring of red cedar bark is placed around his neck, and he is led slowly around the fire. The ceremony is called "making him heavy" (sEp'a′lyîx), and means that he is by this weight prevented from flying away and growing excited again. After his initiation he must stay in his room for a whole year. After biting, he must chew the bark of "devil's club" (wôō′mst), which acts as a purgative.

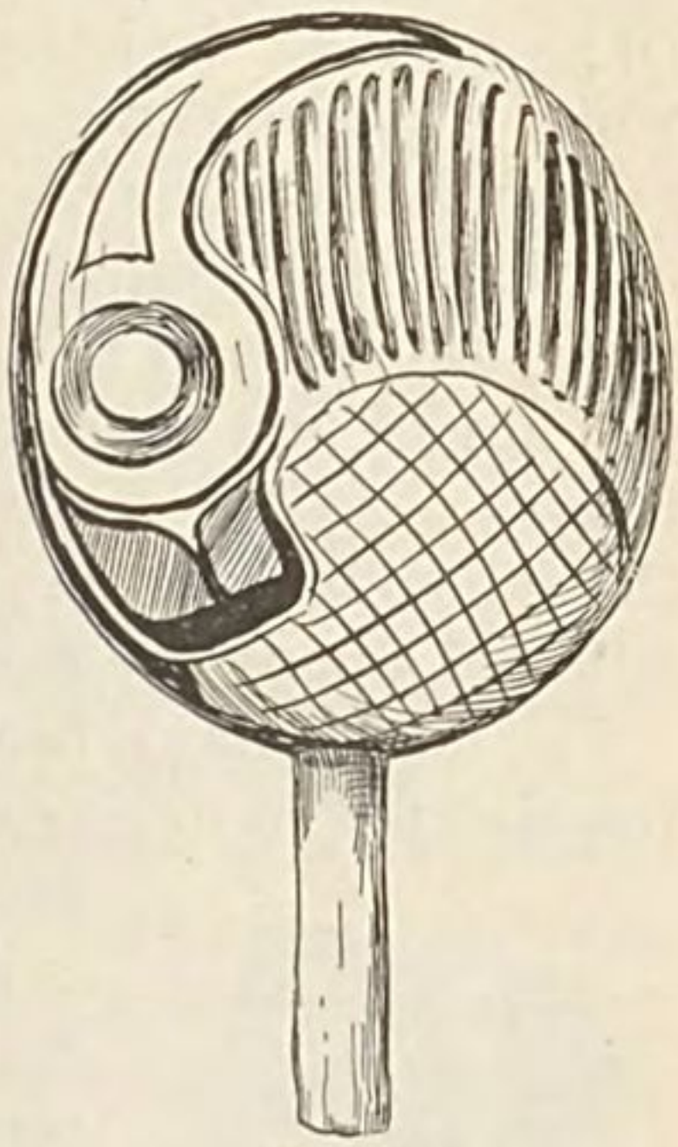

Fig. 213.

WOODEN RATTLE REPRESENTING A SHELL.

Tlingit.

Cat. No. 74333, U. S. N. M. Collected by J. J. McLean.

I received the following description from the Tsimshian. It seems that their customs and those described before are practically identical.

During the dancing season a feast is given, and while the women are dancing the novice is suddenly said to have disappeared. It is supposed that he goes to heaven. If he is a child, he stays away four days; youths remain about six days, and grown-up persons several months. Chiefs are supposed to stay in heaven during the fall and the entire winter. When this period has elapsed, they suddenly reappear near the beach, carried by an artificial monster belonging to their crest. Then all the members of the secret society to which the novice is to belong gather and walk down in grand procession to the beach to fetch the child. At this time his parents bring presents, particularly elk skins, strung upon a rope as long as the procession, to be given at a subsequent feast. The people surround the novice and lead him into every house in order to show that he has returned. Then he is taken to the house of his parents, and a large bunch of red cedar bark is fastened over the door to show that the house is tabooed and nobody is allowed to enter. The chief sings while the cedar bark is being fastened. In the afternoon the sacred house is prepared for the dance. A section in the rear of the house is divided off by means of curtains; it is to serve as a stage on which the dancers and the novice appear. When all is ready, messengers, carrying large carved batons, are sent around to invite the members of the society, the

Fig. 214.

MASK REPRESENTING THE SPIRIT OF SLEEP.

Tsimshian.

From a sketch made at the World's Columbian Exposition.

chief first. The women sit down in one row, nicely dressed up in button blankets and their faces painted red. The chief wears the amhalait—a carving rising from the forehead, set with sea-lion barbs, and with a long drapery of ermine skins (see Plate 47)—the others, the cedar bark rings of their societies. Then the women begin to dance. After a while a prominent man rises to deliver a speech. He says: "All of you know that our novice went up to heaven; then he made a mistake and has been returned; now you will see him." Then he begins the song; the curtain is drawn and masked dancers are seen surrounding the novice and representing the spirits which he has encountered in heaven. At the same time eagle down is blown into the air. After the dance is over the presents which were strung on the rope are distributed among the members of the secret society.

The novice has a beautifully painted room set apart for his use. He remains naked during the dancing season. He must not look into the fire. He must abstain from food and drink, and is only allowed to moisten his lips occasionally. He wears his head ring continually. After the ceremonies are all finished the festival of "clothing the novice" is celebrated. He sits in his room quietly singing while the people assemble in the house. His song is heard to grow louder, and at last he makes his appearance. He has put off his ring of red cedar bark. Then the people try to throw a bear skin over him, which they succeed in doing only after a severe struggle. All the societies take part in this feast, each sitting grouped together. The uninitiated stand at the door. This ends the ceremonies.

Fig. 215.
MASK REPRESENTING THE COLD.
Tsimshian.
From a sketch made at the World's Columbian Exposition.

The initiations are repeated from time to time, and the rank of a person becomes the higher the more frequently he has gone through the ceremony; but nobody, chiefs excepted, can be a member of more than one secret society. The sEmhalai't are in so far a preparatory step to the societies, as everybody who wants to enter them must have acquired the sEmhalai't first. A member of one of the other societies, namely, the mēiLa', nōnLE'm or ōlala', can not enter any other society, but remains in the society in which he has been initiated. Those who have passed twice through the sEmhalai't ceremonies are called ts'ē'ik.

XIV. The Growth of the Secret Societies.

The secret societies of the Kwakiutl, as we know them nowadays, are undoubtedly a complex growth. We will endeavor to elucidate, so far as possible, the history of their development by means of the material presented in the preceding paper.

A comparison of the ceremonials of the various tribes of the North Pacific Coast, which were briefly described in the last chapter, does

not leave any doubt that they are in the main derived from the same source. Not only are the ceremonials much alike, but even their names are identical. Among all the tribes, the badges of the ceremonials are made of cedar bark, which is dyed red in the juice of the alder. Head rings, neck rings, and masks are worn by the dancers. The performances themselves are essentially the same from Alaska to Juan de Fuca Strait. But the most certain proof of their common origin lies in the identity of name among the various tribes. Among the Haida, Tlingit, and Tsimshian we find the names ōlala, mē'iLa, and nō'nLEm, which belong to the ceremonial of the Kwakiutl as well. Among the Bîlxula the names can not be derived from the same words as among the other tribes, but there the ceremonial itself is almost identical with that of the Kwakiutl. It certainly does not differ more from the ceremonial as described here than that of other tribes of Kwakiutl lineage differs from the ceremonial of the Kwakiutl proper. Besides this, the names of the dancers, if not those of their dances, are very often borrowed from the Kwakiutl. Turning to the south, we find the Nootka as well as the Salishan tribes who practice the ceremonial, terming it by the two names Lō'koala and nō'nLEm, both of which are names used for portions of the ceremonial of the Kwakiutl.

The following table exhibits the terms that are used to designate parts of the ceremonial among various tribes:

Kwakiutl.	Haida and Tsimshian.	Nootka.	Salish.
ts'ā'eqa.	ts'ē'ik (p. 660).	tsā'yeq (p. 642).	
Lō'koala.		Lō'koala (p. 632).	Lō'koala (p. 645).
ō'lala.	ōlala' (p. 651).		
nō'nLEm.	lōLE'm, nōLE'm (p. 651).	nōnLE'm (p. 644).	nōnLE'm (p. 645).
mē'iLa.	mēiLa' (p. 651).		mēiLa' (p. 645).

As all the words which I have enumerated belonged originally to the Kwakiutl language, there can be no doubt that the ceremonial of the Kwakiutl has influenced those of the neighboring tribes to a very great extent. It does not follow necessarily that no secret societies existed before the Kwakiutl exerted their influence over the people of the coast. On the contrary, the wide distribution of secret societies and the general similarity of the underlying principle all over North America make it probable that such societies did exist. But there can be no doubt that their present character was attained among the Kwakiutl, from whom the societies in their present form spread over a vast territory.[1]

The question then arises, How did the societies acquire their peculiar characteristics among the Kwakiutl? I may be allowed at this place to

[1]It can not be proved that any connection exists between the hawī'nalaL ceremonies described on page 495 and the sun-dance ceremonies of the Sioux and Blackfeet, but their analogy is quite striking.

refer to what I stated previously (pp. 332, 336) in regard to the growth of the clan system of the Kwakiutl tribes. I pointed out that this system probably attained its present development under the impetus of the clan system of the northern tribes; that the social distinction connected with the possession of a clan legend gave a sufficient suggestion to the mind of the Indian to turn his imagination in this direction, and that the hereditary manitou probably became the totem of the clan.

The close similarity between the clan legends and those of the acquisition of spirits presiding over secret societies, as well as the intimate relation between these and the social organizations of the tribes, allow us to apply the same argument to the consideration of the growth of the secret societies, and lead us to the conclusion that the same psychical factor that molded the clans into their present shape molded the secret societies.

If this argument is correct, we must expect that the legends of the secret societies, although belonging to the most sacred myths of the tribes, show indications of foreign influences, as these must have offered the material for the suggestions which gave rise to the myths. I will not at this place enter into a detailed discussion of these traditions as I have done so in another publication.[1] I have shown that all legends of this region are of complex origin, and that they must have been carried over enormous distances from tribe to tribe. This is true as well of the more insignificant tales as of the most important myths, such as creation legends, and the legends of the origin of the secret societies. To give only one or two examples: In the tale of the origin of the cannibal society of the Hē′iltsuq (p. 401), it is told how a woman gave birth to a number of dogs, who attained the secrets of the cannibal society. This tale is found over the whole of the northwestern portion of North America, among all the Athapascan tribes, among the Eskimo, and all along the North Pacific Coast. Only in this single instance is it connected with the origin of the secret societies, and I conclude, therefore, that a foreign story has been embodied in this myth.

While here the foreign portion of the myth forms only a slightly connected incident of the tale, foreign material is much more closely interwoven with the whole fabric in the most important one of all the legends of secret societies, viz, the tale of BaxbakuālanuXsī′waē. When we compare this myth with the creation myth of the Chinook[2] we find a remarkable resemblance in certain parts of the legends. The grandmother of the divinity of the Chinook, when a child, was carried away by a monster. Their child became the mother of the culture hero, and by her help the monster was slain. Among the Kwakiutl, the cannibal spirit carries away a girl, and is finally slain by her help. In one version, their child becomes the new cannibal spirit. There exist several stories on the west coast of Vancouver Island which form

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[1] "Indianische Sagen von der Nord-Pacifischen Küste Amerikas," Berlin, 1895, p. 329.

[2] "Chinook Texts," Bulletin T 20 of the Bureau of Ethnology, Washington, 1894, p. 9.

probably the connecting links between these two legends. Furthermore, the important incident of the magic flight which figures in the Kwakiutl legend (p. 400) has so wide a distribution, not only on the Pacific Coast but also in the Old World, that we must consider it a foreign element in this myth.[1]

These instances show that the myths referring to the ceremonial are of complex origin.

I will point out another peculiarity of these traditions: When we compare the legends as told by the various tribes of the coast, we find that the ceremonial is derived from a variety of myths. Some men obtained it from BaxbakuālanuXsī'waē, others from the wolves, still others brought it down from heaven. The legend of the Tsimshian tells that a hunter obtained it from a bear who took him into his lodge in the interior of a rock (p. 652). Traditions which are entirely distinct in character and origin are brought forward to explain the origin of the same ceremonial.

What does this prove? We have seen that none of the tales referred to can be considered as a growth of the genius of any of these tribes uninfluenced by any foreign sources. All the traditions are full of foreign elements which can be traced, step by step, to distant regions. When we see, therefore, that the same ritual is explained by a variety of traditions, we must conclude that in this region at least the ritual is older than the tradition referring to the ritual; that the former must be considered as primary, the latter as secondary.

I believe the source of the ritual, as well as of the legends which are connected with it, must be looked for in the advantages and the prerogatives which the membership of secret societies gives. This must have caused a desire to possess such membership, which either led men to acquire memberships in existing societies, or, where these were not sufficient, for the people to invent new ones. Of course, I do not mean to say that the Indian invented traditions consciously and intentionally, but that the desire excited his fancy and his whole state of mind, and that in this manner, after appropriate fasting, the opportunity was given for hallucinations, the material for which was necessarily taken from the existing ideas, or from the ideas of neighboring tribes. These are the peculiar phenomena which were set forth by Stoll in his book on Suggestion, and I think in a deeper manner by Tarde in his book on the Laws of Imitation.

It is easily understood how the exciting aspect of the ceremonial of the cannibal society caused a young man who had gone fasting to believe that he saw in his hallucinations the same spirit under new conditions, and to tell of his experience after his return. As the notion had become established that the spirit, after having been seen, had a tendency to reappear to the descendants, an opportunity was given for the formation of a new place in the secret society. We may

[1] For a remarkable analogue of this tradition collected among the Golds of Amoor River, see "Globus," LXXI, page 92.

therefore assume that the psychological explanation for the development of the complicated system of the membership in secret societies lies in the combined action of the social system on the one hand and the method of acquiring manitous on the other.

While these considerations explain the variety of forms of the secret societies and prove that the myths on which the ritual is apparently founded are probably secondary in character, they do not give a clew to the origin of the secret societies and of the peculiar customs connected with them. There are, however, indications which allow us to conclude that these customs had their origin in methods of warfare. First of all, the deity Wīna'lag·ilîs is considered the bringer of the ceremonial. This name means "the one who makes war upon the whole world," and he rules the mind of man at the time of war as well as during the period of activity of the secret societies. For this reason, also, the secret societies are in action during times of war, in winter as well as in summer (see p. 429). All the oldest songs of these societies have reference to war; the cannibal, the bear dancer, and the fool dancer, are considered as chief warriors, and fall into ecstasies as soon as they have killed an enemy. All this seems to indicate that the origin of the secret societies has a close connection with warfare.

But one thing more must be considered. The customs which we observe nowadays are evidently a modern development of more ancient forms. The ceremonial of cannibalism, which nowadays is the most important part of the whole ceremonial, is known to have been introduced among the various tribes recently, although its foundation, the idea of the existence of a spirit who is killing people, is present among all the tribes. The Kwakiutl state uniformly that the custom of devouring men was introduced among their tribe about sixty years ago, and that it was derived from the Hē'iltsuq. We also have conclusive evidence that the custom was acquired by the Tsimshian not more than seventy years ago, and that they also obtained it from the Hē'iltsuq. Therefore there is no doubt that the custom originally was confined to the small territory of the Hē'iltsuq. Among the southern tribes the action of the cannibal was confined to his taking hold with his teeth of the heads of enemies, which were cut off in war.

The form in which the ceremony of cannibalism of the Hē'iltsuq appeared first was the following: A slave was killed by his owner, and then was torn and eaten by the cannibals, or pieces of flesh were torn with the teeth from the arms or the chest of people, or, finally, corpses which were prepared in a particular manner were devoured by the cannibal. The first of these customs shows clearly its close connection with warfare. The slave is the booty of the cannibal or of his relatives, and by slaying him the victory is once more brought before the eyes of his admiring friends. It is hardly possible to prove definitely that the secret societies have developed exclusively from customs relating to warfare, but I believe my remarks have made clear the close connection between the two phenomena.

APPENDIX.

[To page 336.]

THE ORIGIN OF THE CLAN Ō'MANITS'ĒNÔX OF THE LĀSQ'ĒNOX.

G·ā'x'amlaē Dz'ī'lqoalōLEla Lawis sā'sEmē yîx Sē'paxaēs Lō Yā'q'- 1
Came he it is said Dz'ī'lqoalōLEla and his children that Shining down and
Ent'Emaē xa ts'Edā'q Lō G·ē'xdEn LEwa ā'Lē xonō'ksē Dā'dōqoanaqē-
First speaker that woman and G·ē'xdEn and last his child. Seeing from one corner to the
sEla. K·'ē'slaē g·ā'xē qā'nEmas Dz'ī'lqoalōLEla yîx L'ē'sElaqa qa
other. Not it is said came the wife of Dz'ī'lqoalōLEla that sun woman for
hē'lēnē mās qā'samasē L'ē'sElaqa xa L'ē'sEla. Hē'lat'a nEqā'xa
her being who makes walk sun woman the sun. But he came down
Ō'manîs yîx Dz'ī'lqoalōLEla Lawis sā'sEm. Hē'x·'ida am lawis G·ē'x- 5
Ō'manîs that Dz'ī'lqoalōLEla and his children. Right away it is said G·ē'x-
dEn la qā's'ida lā'xa Wā'k·'ēqēsLa. La dō'x'oaLEla xa nEqā'ts'aqē
dEn went he walked to the Bent Bay its name. He went discovered the ten
Xuā'k'una mExē's lāq. La'lae wunwī'k·aq, laam lawîs lax a'Laea sa
canoes spread on the beach there. Then it is said he hid from them, he went it is said at inland of the
Xua'Xuak'una. Laē G·ē'xdEn dExwuLt'ā'lîs lāq. Lā'laē yā'q'ēg·aLē
canoes. Then G·ē'xdEn jumped out of the woods there. Then he spoke
da nemō'k'uē bEgwā'nEm: "Mā'sōs yā'lag·ilisēx, G·ē'xdEn?" nē'x·-
the one man: "What you working for, G·ē'xdEn?" he was
sōlaē G·ē'xdEn. Lā'laē nā'naxma'ya: "ꞱāꞱōqoasta'yîn lōL." Lā'laē 10
told G·ē'xdEn. Then he replied: "I am trying to get a magical treasure from you." Then it is said
wuLē' G·ē'xdEna xa bEgwā'nEmē: "Maē'noxoas?" Lā'laē nā'naxmayē
asked G·ē'xdEn the man: "Of what tribe are you?" Then it is said he answered
da bEgwā'nEmax: "Mā'x'enôxu'nux. Hau'xwidōx alēwats'ä'xsnōx
the man: "We are killer whales. He broke it our hunting canoe
g·ī'qamayēx." Lā'laē wuLā's·āwē G·ē'xdEn lāx t'Emyōsē xēs Xuā'k'-
this chief." Then it is said he was asked G·ē'xdEn at sewing material for his ca-
unēxs hau'xwidaē. Lā'laē nē'La sa dō'ēx. "Hā'g·a ax'ē'dEx dōē'xa,"
noe it was broken. Then it is said he said of the cedar twigs: "Go take cedar twigs,"
nēXsō laē G·ē'xdEn. Lā'laē qa's'ida. K·'ē'slat'a qä'Laxs g·ā'xaē dā'la 15
he was told it is said G·ē'xdEn. Then it is said he walked. Not he went long he came carrying
xa dawē'x qa s tsâ'wis lāxa bEgwā'nEm. Lā'laē da bEgwā'nEm aaLtsā'la
the cedar twigs to give them to the man. Then it is said the man broke to pieces
xa dō'wēx: "Mā'sē xa'nLEla g·iLā'sîk· tE'lqoa?" Lā'laē da bEgwā'nEm
the cedar twigs: "What makes it weak?" Then it is said the man
yā'laqa xa nEmō'kuē bEgwā'nEm qa lēs ax'ē'dEx sE'bēsa. Lā'laē da
sent the one man to go take twisted on beach (?) Then it is said the

bEgwā′nEm dzî′lX’wīda. K·’ē′slat’a qä′Laxs g·ā′xaē dā′la xa sE′lbēs.
man ran. Not it is said long he came carrying the twisted on beach (?)

Lā′laē da bEgwā′nEm t’E′mx·’ it xa Xuā′k’una. Lā′laē dzî′XsEmtsa
Then it is said the man sewed the canoe. Then it is said he rubbed on to it

qoalē′k·ī laxis t’Emā′yē. Laam ʒōā′La. Lā′laē g·ī′qamaya sa mā′x’ēnôx
gum on his seam. That was finished. Then the chief of the killer whales

yîx Hē′lilälag·ilîs, hē′iEm LE′qEm sa g·ī′qamaya sa maa′mx’ēnôX:
that Hē′lilälag·ilîs. That was the name of the chief of the killer whales

5 “La’mōX lāLEn xuî′lbalax mā′sto lā′xōx G·ē′xdEn qa sEk·î′lasōX xa
“This our will go my quartz pointed harpoon to this G·ē′xdEn to spear the

qoayî′m. Hē′mîs ʇē′LEqEm s ME′nLōsElas ʇo MEnmEnlēqa’las, ʇawīs
whale. And it the names of ME′nLōsElas and ME′nmEnlēqa’las, and it

g·ō′kuLaōs Mā′xēxsēk·îla LEs g·ōkuLaōs. Lā′LE mā′x’ēnôxLēs LO′qulē-
your future house killer whale painting will be your future house. It will be killer whale will be your future dish.

Laōs. Hē′mîs halā′yu LO q’ulā′sta ʇEwa xuî′lx·’ēx xuta′yu qa s saX-
your. And the death bringer and the water of life and the quartz edged knife for utcher knife

x·ä′LōS.” Lā′laē wī′XstEndē da maa′mX’ēnôX lā′xîs alē′wats’ē. Lā′laē
your.” Then they launched the killer whale at their hunting canoe. Then

10 LEx·’ē′dē da maa′mx’ēnôx. G·ā′xlaē G·ē′xdEn nä′nakᵘ laxîs g·ōkᵘ.
they started the killer whales. He then came G·ē′xdEn home to his house.

Laa′m sEk·ā′ xa qoayî′m LEwa q’ā′sa. Lāg·iLtsē g·ī′qamēx·’ida.
Then he speared the whale and the sea otter. Therefore he became a chief.

Lā′laē ē′t’ēt qā′s’idē G·ē′xdEn. Lā′laē dō′x’oaLEla xa wī′waōq.
Then again he walked G·ē′xdEn. Then he discovered the wolves.

Wā′xsqEm laē da nEm. Lā′laē mā′LEmē da nE′mē wī′waôq. Lā′laē
A head at each end it is said the one. Then it is said two heads the other wolf. Then

G·ē′xdEn lāx qa s yā′yaq’Entamē xa wī′waôq: “Ma′sōs axsEwā′q’ōs?”
G·ē′xdEn there to speak to the wolves: “What you doing you?”

15 nē′x·laē G·ē′xdEn lā′xa wī′waōkᵘ. Lā′laē LE′lalē da wī′waōkuax
he said G·ē′xdEn to the wolves. Then they called the wolves

G·ē′xdEn qa lēs lax g·o′kuas. Lā′laē G·ē′xdEn Xuēlig·ā′nō sa mā′LEmē
G·ē′xdEn to go to their house. Then G·ē′xdEn he was put on his back of the two headed

wī′waōkᵘ. Lā′laē lā′g·aa lā′xa dz’Elā′L, g·ō′kula sa xu′mdē. Lā′laē
wolf. Then they arrived at the lake, the village of the land otter. Then

yā′q’ēg·aLē da wī′waōkᵘ: “Laams lē′dEnōxsLEs xu′mdē.” Lā′laē
he spoke the wolf: “Now you this will be your dance land otter.” Then

g·î′lx·’idē da wī′waōkᵘ: “Lā′laē lā′g·aa lāx g·ō′koa sa g·î′la. “Laams
he trotted the wolf. Then they arrived at his house of the grizzly bear. Now you

20 lē′denuXsLîs g·î′la.” G·ā′xēLa sa L’ā′sq’ēnôx lē′idEnōX sa g·î′la LEwa
this will be your dance grizzly bear. Therefore the L’ā′sq’ēnôx having dance of the grizzly bear and the

xu′mdē. Lā′laē qā′s’idayū sa wī′waōkᵘ. Lā′laē lā′g·aa lāx g·ō′kua
land otter. Then walked by the wolf. Then they arrived at the house

sa wī′waōk. Haē′LEla’yu lax g·ō′kua sa g·ē′qamaya sa wī′waōk xa
of the wolf. He was taken at the house of the chief of the wolves the

LēqadêS ʇō′ʒōʒolaqa. Lā′laē wuLā′sawa: “Mā′sōs yā′lag·ilisax?”
his name Howling woman. Then he was asked, “what you working?”

Lā'laē nā'naxmaē G·ē'xdEn: "La'Lōkoasdayîn." Lā'laē dzō'sō sa 1
Then he answered G·ē'xden I come to get a magical treasure. Then he was given of the

mā'stō ꝊEwa xumtxu'mtag·ila ꝊEwa halā'yu ꝊEwa lēlē'ida xa hama'n-
harpoon and the making everything burn and the death bringer and the dances, the laughing

xolaL ꝊEwa qāq'ē'LElaL. Lā'laxaa nē'k·ē ɲō'ɣōɣolaqa qa s lē wī'na
dance and the mosquito dance. Then again said Howling Woman that they to make go war

xa Qā'q'Egwā'dEXLa lEɣuXLä'yas sa lē'lqoalaLayē. Lā'laē Tsō'ku-
the Masters their name their name of the tribes. Then 'Canoe

lag·iLa laē da g·ī'qamayas. Hē'x·'ida am lawîs la wī'nē da wī'waōkᵘ. 5
Breaker' it is said the their chief. Right away it is said they to make went war the wolves.

Lā'laē qā'x·'idE xa g·ī'qamēXdē. Mō'p'Enk·îm laē da qā'g·îkᵘ. G·ā'x-
Then they cut off his head the chief past. Four fathoms his face it is said the head cut off. They came,

laē tsâ'yi da qā'g·ukᵘ lāx G·ē'xdEn. Laam tē'kuēt'ēdayu lāx G·ē'xdEn.
it is said they were given the heads to G·ē'xdEn. Then they were hung on to his body to G·ēxdEn.

Hē'x·'ida amlawîs dzē'dzasâ'lē da qēqā'g·îkuax. Laē nē'nakuē
At once it is said they squeaked the heads. Then he went home

G·ē'xdEn. Laa'm Ꝋō'kualaxēs. Hē'x·'ida amlawîs qoā'qoēk·a xa
G·ē'xdEn. It was his magical treasure. At once it is said he went whaling the

qoayî'm. Lā'laē G·ē'xdEn yā'laqax Dzî'lqoalōLEla qa lēs g'oaā' lāx 10
whale. Then it is said G·ē'xdEn sent Dzî'lqoalōLEla to go sit on rock at

Dō'q'uXdEma xa Ꝋawä'la lāx LA'sqas qa dā'doqoalēsē xa qoayî'm.
'Watching place' the standing near the water at Lāsqas to watch the whales.

Hē'Em lag·īLs sEk·a' LA'sq'ēnôx lāxa qoayî'm LEwa lēlai'dē. Hē'Em
Therefore they spear the LA'sq'ēnôx at the whales and the dances. That

axnō'guadag·iL sa L'ā'sq'ēnoXuas. Laam lā'pa.
was obtained by the LA'sqēnôx. That is the end.

[To page 355.]

NEQĀ'P'ENK·'EM'S SONG.

1. Ts'ēLwuXLEntsēa sEns q'ā'lasōwa lāx LA'sōtēwalēts nā'la.
Famous great our known at outside of world.

Awä'lē da g·ī'qama wulqamä'iläi g·ī'qama'ya ōkuqēslai ? ([1]) lāx 15
Real the chief highest of all chief by himself ? to

g·ī'g·iqama îs lē'lqoalaLē. "Nō'gua'am laē ā'Llanōx as g·ī'g·iqama'ya
the chiefs of the tribes. "I am it is said having servants of chiefs

îs lē'lqoalaLai. Nō'gua'am lālaē ayî'lkoadês g·ī'g·iqama'ya îs
of tribes. I am it is said having for speakers chiefs of

lē'lqoalaLai. Nō'gua'am lā'laē lElaxs'a'mōLax q'E'lq'atîsâlax g·ī'g·i-
tribes. I am it is said pieces of copper broken coppers the

qama'ya îs lē'lqoalaLai." ɲoā'L tsōla sEns g·ī'qamaēx xa'nLElag·ilîs
chiefs of tribes." Do not let our chief here get worse

Lō'malag·ilîs mō'masila yaixLE'na sEns g·ī'qamaēx lē'lqoalaLai, ā'Lalai 20
overdoing hurting property our chief here tribes, else

Lens xa'nLElak·as lēx·aam laxa L'ā'L'aqoa laxē lE'laxs'amūta q'a'lqati-
we shall get worse only being at the coppers at the broken pieces of copper pieces of

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[1] One word missing.

1 sawē lāxs'Entā'laLtsē q'alq'altE'laLtsē saptEndā'laLtsē, hēwiyakilitsē,
copper copper breaker great copper breaker great who throws copper into water great to whom nobody can climb up great

k·'ē'soyak·ilitsē, g·ī'g·iqama'ya. XōXslatsēyayūLēx q'oā'lōsōmas
the highest one in back great chiefs. You went long ago you burnt to ashes

xa nE'msqEmāX wuL lē'lqoalaLai: XōXslatsēyayūLēx g·ī'qama'ya
the one long ago tribes. You went long ago chief

lē'lqoalaLai, q'u'mx·'idāmas xa lā'laxsâlōLa q'oāqumXsâlamas yā'g·i-
tribes, making them run away the going to and fro in a hole making them run to and fro in a hole you

5 LExtsEmōL g·îns mō'qumē g·îns lē'lqoalaLai. XōXlatsēyayūLēx
were enraged with them in your canoe our loaded canoe at anchor our tribes. You went long ago

ōXoā'ya ts'ō'nōqumnuXsōs ts'ē'ts'ēLwā'laōLa guā'pa'lîs lē'lqoalaLai.
oh sound ts'ō'noqoa sound the famous one north end tribes.

XōXslatsēyayuLēx g·ī'qama'ya mā'Xuax·ilayulēX g·ī'qama'ya îs
You went long ago chief giving away blankets chief of

lē'lqoalaLai wooō ya.
tribe wooō ya.

2. ƍoā'L tsō sEns ē'waqamē qEns q'ā'lasowa lax Lā'sotiwalîts nā'la.
Don't let us our going in front of him our the one who is heard at outside forehead of world.

10 Ā k·'esLala lEns lē'lqoalaLai, bā'xswalaLa[1] g·īlōLayaLa xEns mō'qEmaē
Ah! not let us, tribes, steal steal from our loaded canoe

g·îns lē'lqoalaLai, ā'LalalEns ts'E'ng'um laxa wulasōlāxa mō'koasō lāxa
our tribes, else we he will be angry at the hands will be tied will be hanged at the

mō'qumaēx, lē'lqoalaLai. "K·'ēs laxā'owîs LEns wax'a'mlaxa wāx-
loaded canoe tribe. "Never mind us do not mind it mind

tsēEm lāxa. NEmō'X'a'mlaxa g·în nEmā'x·itsē'yak· Lō nE'msqEmak^{u}
great is at it. I alone I as great as this and one

lē'lqoalaLai. Nēmāx·itsē'ya g·în Lō mō'sqamāk^{u} lē'lqoalaLai. Nō'-
tribe; as great as I and four tribes. I

15 guaq'ā'maas g·īxtowēsō XusE'la g·ī'xtowēsō sEns g·ī'qamayēx
am the one placed on top of fighting place placed on top of our chief

lē'lqoalaLai. Nō'guaq'ā'maas Lā'qoaqamlîs, Neg·ē'atsē, K·'ō'kuig·aliso.
tribes. I am the one Copper face, Great mountain, Supporter,

Wā'wala'las, g·în g·ī'qētēyatsē g·în lē'lqoalaLai. Wōa wâ.
Obstacle, my having me for master. my tribes. Wōa wâ.

[To page 355.]

NEQĀ'P'ENK·'EM'S SONG.

1. ƍoa'la mE'lmElsElaXdôx'ōL, lē'lqoalaLai! ƍoa'la sa mE'lmEl-
Do not look around, tribes. Do not indeed look

sEladaôqōL lē'lqoolaLai, ā'Lala LEns dā'doxkwinala lāx laXōX
around, tribes, else we shall see something terrible at our

20 g·ōXtsēax sa â'lax g·ī'qama'ya.
house great of the real chief.

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[1] A distorted Chinook jargon word for kapsiwa'la.

2. ƍoa'la dō'doXsēstalaXdaôxōL, lē'lqoalaLai! ƧSoa'la sa dō'doXsē- 1
Do not look forward and backward, tribes, do not indeed look forward

stalaXdaôqōL, lēlqoalaLai! ā'Lala LEns dā'doxkwinala lax laXōX
and backward, tribes! else we shall see something terrible at our

g·ō'Xtsēax sa â'lax g·ī'qama'ya. Ts'ō'noqoanuXtsē lalōX g·ō'xtsēax
house great of the real chief. Ts'ō'noqoa having great our house great

sa â'lax g·ī'qama'ya. Lā'g·iL tsēasōX hā'manēkwilalatsēa dō'lEmx·iti-
of the real chief. Therefore our making unable to move great making numb

latsēa, k·'ēs q'u'laXLag·ila, k·'ēs pE'nLEXLag·ila aiXōX g·ō'xtsēax sa 5
great, not life making, not breath making our house great of the

wā'waxsqEmg·īlaxtsēa â'lax g·ī'qama'ya.
double chief great real chief.

3. ƍoa'la hā'yutElaXdaôX'ōL, lē'lqoalaLai! ƍoa'la sa hā'yutEla-
Do not make noise, tribes! Do not indeed make

daôqōL, lē'lqoalaLai! ā'Lala sEns Lā'aqala'yūtsēa sa La'qanuXtsēa
noise, tribes! else we overturn great of the overhanging great

g·ī'qama'ya. "Nō'guaq'ā'mas g·ā'yaxalasa qoī'Laxalasa g·īg·Eqama'ya
chief. "I am the one from whom comes down from whom is untied chiefs

s lē'lqoalaLai. 10
of tribes.

4. ƍōa'la dEndēlix·ilaXdaôx'ōL, lē'lqoalaLai! ƍoa'la sa dEndēlix·i-
Do not grumble, tribes! Do not indeed grum-

laXdaôx'ōL, lē'lqoalaLai! laXōX g·ō'xtsēax sa wā'waxsqEmg·ilaôx-
ble, tribes! in our house great of the double

tsēa g·īqama'ya. Wā'wanE'mēqalag·ila g·'īg·ênēqalag·ila lai ā'la.
great chief. Making all expect to die frightening blood

kwisawē sa wā'XwuLa g·ā'xēLā'lisEm mā'mEnLēya lāXōX g·ō'x-
on body of the those who tried to enter to eat at chief's house in our house

tsēax sa wā'waxsqEmg·ilaôxtsēa â'lax g·ī'qama'ya." HaiXa'mē g·în 15
great of the double great real chief. Only that it is me

tsE'nkumnā'xua ha'lstalag·iliLa g·īxstalag·iliLa laXōX ma'menlayū
angers eating a little only eating like a chief in our food given

tsēax sa wā'waxsqEmg·ilatsēa â'lax g·ī'qama'ya.
great of the double great real chief.

[To page 356.]

HĒ'NAK'ALASŌ (=ENVIED).

1. WuLmē'g·în nēx·qē ōgwu'la kwä'nēsElamas xa nā'la. K·'ē'saiLEn
I thought I said another one made smoky the weather. No I am

nEmōgu'lag·ilîs am hē'g·alag·ilîs am kwa'kux·âlatsēa wōxspEndālatsēa
the only one in the world the only one on earth making smoke great at both ends of the year

LE'lanEm axa wī'wulqE'mak" lē'lqoalaLai; wo ho ho. 20
called the all tribes tribes; wo ho ho.

2. Wā'LdEmg·ā'nEm La s yā'q'EndEmg·ā'nEmLas yā'yaqēt'ēnēqa;
What will be his word of what will he say again the spider woman;

1 k·'ēsLait'ē amō'sayaLa wailēqayaLa wāldEms yā'yaqēt'ēnēqa; k·'ēs-
not will he brag going in zigzag lines his words the spider woman; not

Laid'ē amō'sayaLa sag·ēLExâ'laLa Xuā'kuiL'Exâ'laLa q'E'ltabuLā'yaLa
will he brag he will give away canoes carrying canoes in his mouth pretending to break coppers

k·ōqoabula'yaLa k'uē'lasbuLā'yaLa L'ē'nag·ilabuLa'yaLa wā'LdEm s
pretending to break coppers pretending to give feasts pretending to give grease feasts the words of

yāyaqēt'ēnēqa ōwag·iL'amasi'la lE'mlEmXumlisa quē'quxaLEmli'sa
the spider woman thus he turned dry in his face moldy in his face

5 hē'nak·'aētse Lā'Lawitsē sEns g·ī'g·iqama'ya.
standing in front of their belly standing in front of him our chiefs.

3. K·'ē'ōsk·'ā'sowa ēx ēanag·alas. Lā'naXua'mēk· wāx· wā'nēxsila
Nothing at all is enough for you. Sometimes this tried maltreating

ā'nag·'ila lamXd'as haiquē'x·s mā'sLa wa'yōLa yā'yaLaLg·iwē qanLō
making enough you will be like what (future) old dog open your legs before me when I shall

yā'k·alīLō, he'imōLxaas quē'x·'idē layō'Lg·în laxs'Endēyōl xa Lē'qEm-
get excited in the house, thus you did when I did break copper the named

nōXtsea a'nqolatsēa ʇō mā'xts'ōlEmtsēa sEns yaēxLEn LēqEmnōXtseā
great 'Cloud great' and 'Of whom all are ashamed' great our property named great

10 hai'matsēa ʇō māx'ēnōxtsēa ʇō LēqEmnōXtsēa ōpalaā'tsēa ʇō Lē'qam-
'Chief great' and 'Killer whale great' and named great 'Point of land' great and named

nuXtsēa k·întsēgumnuXtsēa ʇō LēqamnuXtsēa qau'lōmatsēa. HaimEn
great 'Of whom all are afraid' great and named great 'Beaver great.' That is mine

nE'nqEmx·'itayū g·în yā'lasuwa mō'masasōwa xa tē'istōs, pēLpaXsēōwa
what is thrown into the fire my vanquished ill treated the limp one when I eat, limp when eaten

xā'daak^{u}mEnēx wā'wi'lāla xoa g·ī'qama'ya.
slim small ones trying to vanquish this chief.

4. Wē'g·a xoa g·ā'xēLElaōx mā'mEnLēya laxō Lawu'lqamāyax,
Go on! the poor one who entered who wants to be fed from the sons of the chief

15 q'oalē'XLēyatsē kuā'xsistālatsē kuā'x·ilanō'kumētsē g·ī'qama'ya.
whose own name great smoke around the world great smoke ahead great chief.

WaX'E'mLa wā'lEmx·'ida q'ē'k·isamas nax'ēdāmasLa yēx·ts'ōsElaitsōX
Never mind endeavor to give them much food making drink qualmish

hō'g'oaLElatsōx wī''laqō lō'yEwīnōXoa g·ī'qEma'ya.
vomiting never goes back from the middle chief.

[To page 358.]

1. YānanōXlai wā'ya sa yā'lag·ilîs sa nā'la.
There is a bear it is said the river of the traveler around the world of the world.

2. YaLā'wisElai nā'na sa wā'ya sa yā'lag·ilîs sa na'la.
He is wild it is said the bear of the river of the traveler around the world of the world.

20 3. Yā'xsEm lā'laai ts'E'lx·aya xa wā'ya sa mā'mEnsilalisax g·îns
Badness then it is said going up the river the river of the measuring life of man our

lē'lqoalaLē.
tribes.

4. Yā! sī'siyūL laē ts'E'lx·aya wā'ya sa mā'mEnsilalisax g·îns 1
Ya! sī'siyūL it is said going up the river the river of the measuring life of man our
lē'ElqoalaLē.
tribes.

5. Yā! lā'm lā'laē awā'wustalēkᵘ Lā'qōstalēkᵘ ayiya xEns nō'laqamaē
Yā! they are it is said great things going up the river copper going up the river ayiya our oldest brother
aya xg·īns lē'ElqoalaLē.
aye of our tribes.

[To page 358.]

1. Haliōqoag·a'nEmt āna L'ē's'ala g·ā'nEmLa g·ē'qama'ya lē'lqolaLai 5
He will not have mercy upon the people heat it will be the chief tribes.

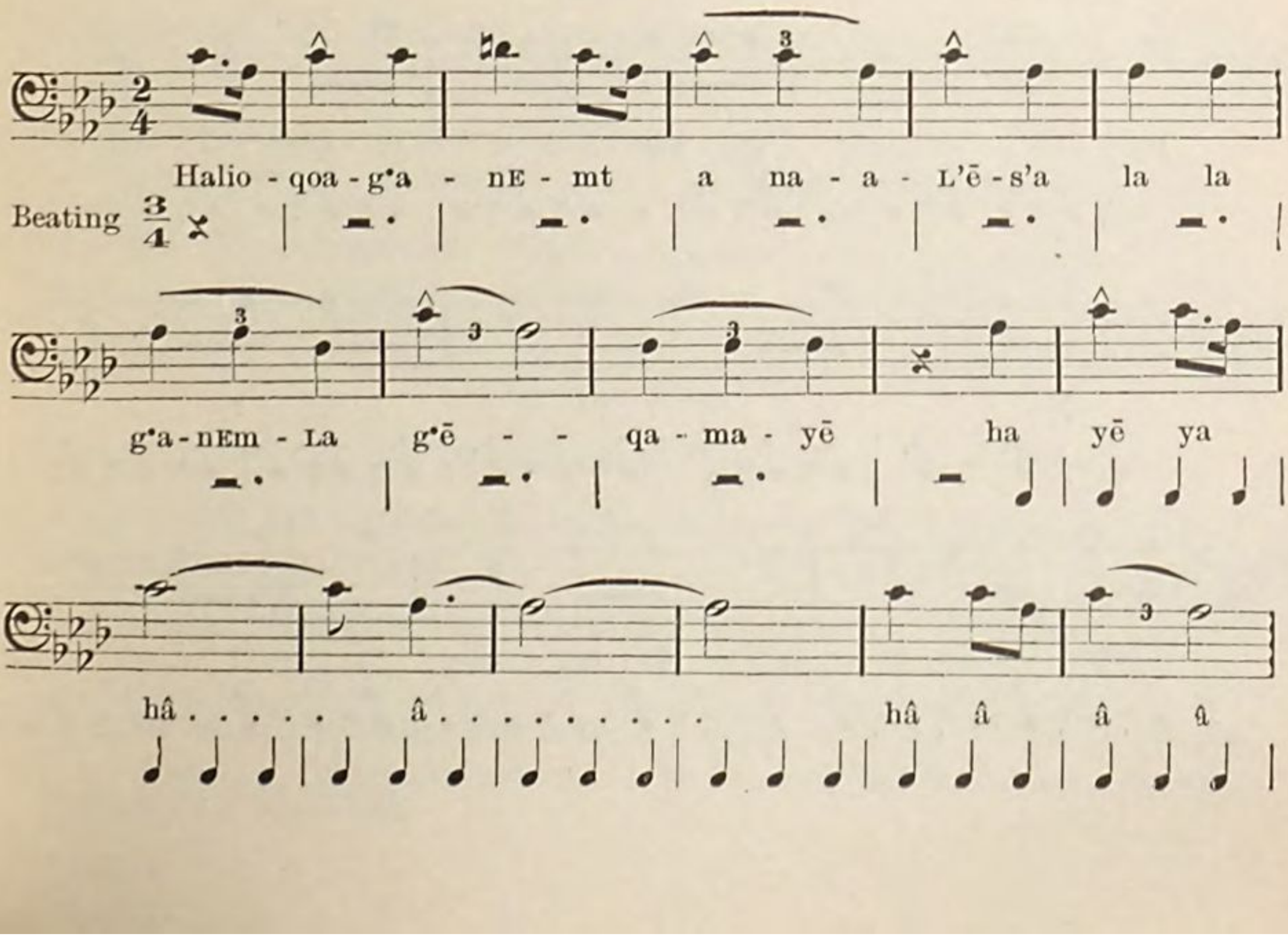
2. Lā'tsēk·as g·ā'nEmLē haliō'qula L'ē's'ala g·ā'nEmLa t'ēqoapätsēa
Thus great will be not having mercy the heat it will be great fire with stones in it
sEns g·ī'qama'yē lē'lqoalaLai.
of our chief tribes.

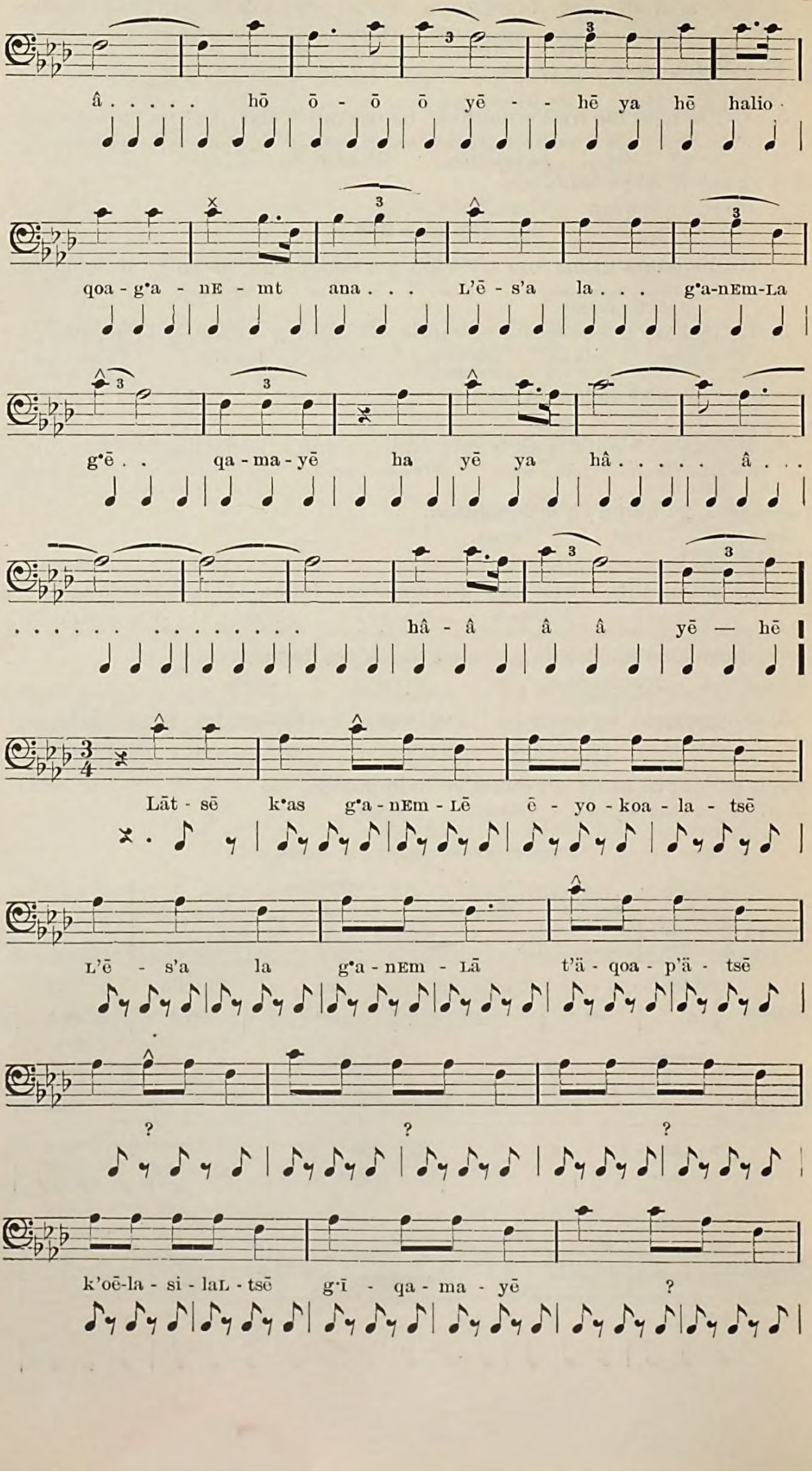
3. Mōtma'nō's'a q'ē'q'ak·îs mōtmadēg·ē'xoa k·'oē'lasilaLtsēx t'ai'qoa-
You eat all the rest of the feast eating much who eats the rest this great one who always gives feasts this great
palāLtsēx g·ī'qama'ya lē'lqoalaLai.
one who always performs the fire dance chief tribes.

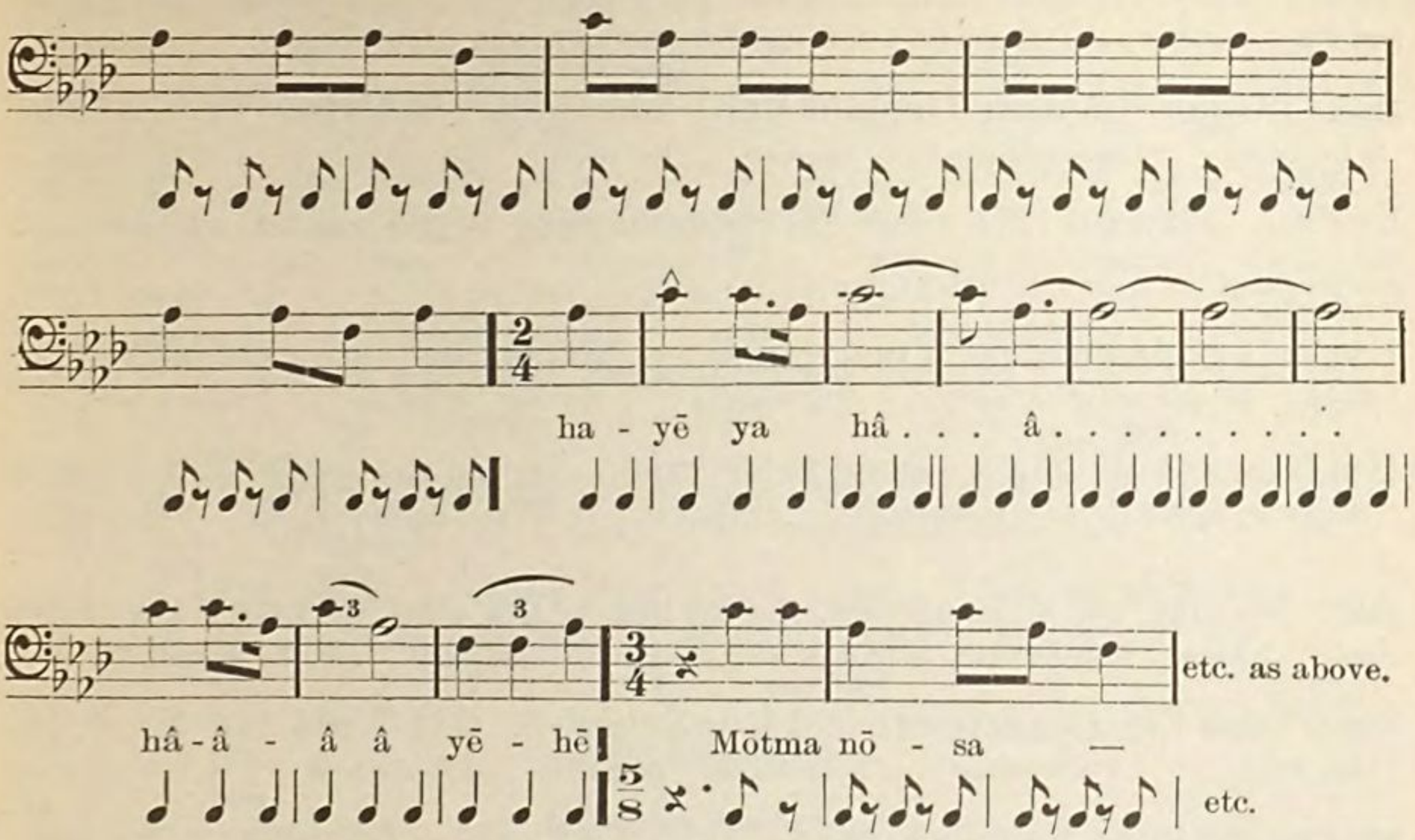
4. Lō'malag·ilitsē wîst'Ens g·ī'qama'yēx lē'lqolaLai. Wīq'ana'koei 10
Too great is what he is doing our this chief tribes. Who is like to him
hēistalaEn k'oē'latsēstāla xEns g·ī'qama'yēx lē'lqolaLai.
going around giving feasts all around. our this chief tribes.

5. Yō'EmxEnt ēs'aqEmōL hē'wēxaLē nE'mp'anāLa k'uā'k'uilatsE-
This must be put into him by his father he never once gave a small
māLa g·ē'qapoē sEns g·ī'qama'yē lē'lqolaLai.
feast lower chief of our chief tribes.

TUNE, RECORDED BY F. BOAS.




â . . . . . hō ō - ō ō yē - - hē ya hē halio
qoa - g•a - nE - mt ana . . . L'ē - s'a la . . . g•a-nEm-La
g•ē . . qa - ma - yē ha yē ya hâ . . . . . â . . .
. . . . . hâ - â â â yē — hē
Lāt - sē k•as g•a - nEm - LĒ ē - yo - koa - la - tsē
L'ē - s'a la g•a - nEm - LĀ t'ä - qoa - p'ä - tsē
k'oē-la - si - laL - tsē g•ī - qa - ma - yē ?



The three part beats are syncopated, the sticks being raised at each quarter and therefore falling nearly on the second eighth of the three part bar. The four part rhythm is syncopated in the same manner. The rhythm of the tune of the second line, Lāts'ek·as g·anEmLē, is not quite certain. I counted the f of the second bar almost three eighths, and also in the seventh bar of this part, but there seemed to be throughout slight irregularities in rhythm of the first seven bars of this part of the song, though the beating is perfectly regular, five eighths against three of the tune. The text as sung by my informant differs slightly from the dictated text.

[To page 374.]

Nū'yampalisa Lai laôx, nū'yampalisa Lai Lox̣, g·ā'xaōstōa Lai Lau 1
Tale from the beginning your, tale from the beginning. your, you came up

q'ō'mōk·ustâaLlaōL q'ō'manakulak·as, q'ō'mōXs'ā'lak·a's'ō, q'ō'mX-
your Q'ō'mōqoa house came up real wealth moving, real wealth coming ashore, wealth on

q'ōmg·ilig·ē nEg·īsīlask·as'ō nē'g·iyatsēk·as'ō. Nū'yampalisa Lai Lôx.
his back making a mountain of property great real mountain. Tale from the beginning your.

[To page 382.]

NŌMASE'NXĒLÎS.

Qoā'LEla a'm laē Nō'masē da bEguā'nEm lāx Â'g·iwa'laa lax mEku-
In the beginning it is said Nō'mas the man at Â'g·iwa'la at in front

ma''ya Tsā'xîs. G·ō'guat sîs g·ō'kuê lax Â'g·iwa'la. Xu'ng·ink·âla El 5
of Fort Rupert. He had a house his house at Â'g·iwa'la. Father and son it is said

Ʇawîs xonō'kuē L'ā'qoag·ilaqEmaē. NEmā'g·u'stâlîs a'mlaē Nō'mas
with his son "Copper maker face." They came up together it is said Nō'mas

1 Ʇawîs Ʇ'ā'qoa. Qoā'LEla a'm'laē t'ē'g·its'â'lēL xa L'āqoa. Lā'g·iLas
and his copper. In the beginning it is said he lay on it with knees drawn up the copper. Therefore

ꞩoā'LElaam L'ā'qoag·i'laqamēXLa xonō'kua. G·ā'xlaē Yix·ā'qEmaē
in the beginning "Copper maker face" its name the child. He came it is said Yix·ā'qEmaē

hē'ilax Nō'mas. Nē'x·laē Yix·ā'qamayaxs q'ulē'nōkua as Nō'mas.
and asked to do something for him Nō'mas. It is siad Yix·ā'qEmaē his uncle having of Nō'mas.

Laa'm hai'lānEma LĒ Yix·ā'qamayax Nō'mas qa ēs qaqak·'anē'nēLē.
Then he was asked to work by Yix·āqEmaē Nō'mas that he took a wife.

5 Hai'laē g·ō'kula Yix·ā'qamaē LîXsī'waē. La'am mā'wōdē Yix·ā'qaya-
It was the town Yix·à'qEmaē LîXsī'waē. Then he caused him to move his camp Yix·ā'qE-

max Nō'mas qa s lē qap'ä'LaLawē lāx LîXsī'waē, qa qEg·ā'taēnēLas
maē Nō'mas that he went to live together with him at LîXsī'waē, for he wanted to marry

xonō'kuas Yix·ā'qamāyas g·'ē'dēLas Sâ'g·i'yē. ME'Xula laē Yix·ā'qa-
his child Yix·ā'qEmaē his princess Sâ'g·i'yē. He desired it is said Yix·ā'qE-

mayax g·ō'kuas Sâ'g·i'yē yaxs L'āxL'ayaai'koaē. Lā'g·iLas nēx· qa s
maē his house Sâ'g·i'yē his carvings. Therefore he said that he

qig·ā'dē laq. Mā'x'ēnôx laē k·'ā'tama'ya sa g·ōkᵘ. G'utsē'g·ilaē da
married her there. Killer whale it is said the painting on the front of the house. Sitting on its back the

10 ts'ē'k'oêq. K·'ēôs El k·'ēs ꞩoä'Laāts awī'nakuiLa sa g·ōkᵘ. La'am
gulls. Not it is said not the same all around the floor of the house. Then

laē Nō'masē g·î'lg·îlaxsL lāL g·î'ldzaqoaL dā'la xēs sē'k·'aqanō, qa ēs
it is said Nō'mas first out of the canoe he will go he will speak first taking his staff, for it

hē'g·iLaEl ꞩoä'LĒ sē'k·'aqānôs ā'yasōxtâlag·īLas sē'k·'aqānôs sēxsq'ā'-
therefore it is said thus his staff hand on top of it therefore his staff because he

q'àLlēlaas lāx g·'ē'sg·'êdēLa sa g·ī'g·iqama'ya sa lē'lqolaLai. Laa'm
carried on his hands there princesses of the chiefs of the tribes. Then

dā'la xîs yā'q'antp'ēq qē s sē'k·'aqānō. Laa'mlaē lōLx g·'ē'dēLas
he took his speaker's staff for his staff. Then it is said he got the princess of

15 Sâ'g·i'yē. Laa'mlaē â''mē Nō'mas la nEmā'ēL Ʇō Yix·ā'qamē. Laa'm
Sâ'g·i'yē. Then it is said only Nō'mas was together in house and Yix·ā'qEmaē. Then

laē lā'mēLētsEnx lax Ts'ā'watē. Lā'laē xoā'naL'ēdExdaôx qa s lē lax
it is said it was time to enter in Ts'ā'watē. Then they prepared that he went to

Ts'ā'watē. Laa'm k'oē'lats'ēxsdē Nō'masa sēs L'ā'qoa. Lā'xdaôx laē
Ts'ā'watē. Then he wanted to give a feast Nō'mas with his copper. There they it is said

sē'x'uit. Laa'm lawîs hā'hanbala lax L'ā'qoaxstElîs. Laa'mlaē
paddled. Then it is said they stopped at 'Copper under rock.' Then it is said

t'ā't'ētsa qa s t'ē'sEliL. Lā'laē wāx· lā'lōL ā'xa t'ē'sEm qa s lā'xsē
they wanted to take the stone for stone in house. Then it is said try they got that stone for it to take into canoe

20 qa s lēs lax Ts'ā'watē. Lā'laē wē'Ldaôxs. Â'Em la wē'sla Lā'ts'Ex-
for to go to Ts'ā'watē. Then it is said they were not strong enough. Only he then he put un-

stēlēsa sa L'ā'qoa lā'xa t'ē'sEm. Hē'imîs â'Em la Lē'qEm sa t'ē'sEmē 1
der it of the copper to the stone. That is only is the name of the stone
L'ā'qoaxstElis. Laa'm nē'k·îxs lâ'Laaxa xa t'ē'sEm qa ēs laē'naē
'Copper under rock.' Then he said he got the stone for his going
ō''mayūguī'la sa L'ā'qoa lāq. Lā'laē lā'g·aa lax Ts'ā'watē. Laa'm
payment made of the copper there. Then it is said he arrived at Ts'ā'watē. Then
sē'k·'aqanōnōx sēs L'ā'qoaxstâla sē'k·'aqanō, atsEtâ'laxsēla sē'k·aq'ānō.
having his staff his copper on top staff, hand on top also staff.
Laa'm k'uī'las'it xa q'ē'nEmē lē'lqoalaLaya. Laa'm L'ā'yu xēs Lē'qEm. 5
Then he gave a feast the to many tribes. Then he changed his name.
Laa'm laē Kuā'x·ilanōkumēx·La, L'ā'qoag·ilaqEmēXLā'laē Lawu'l-
Then it is said 'Having smoke' on him, 'Copper maker face' on him his
qamāyas. Ts'â'mâXLā' lat'a nEmō'kuē xonō's. Laa'm wī'la.
successor. 'Giving in the morning'[1] but one his second child. That is all.

[To page 384.]

Ō'MAXT'Ā'LALĒ.

G'oaai's laē da ts'ê'kumElk^{u} lāx TE'ng·îs. Lā'laē lā'wōda xēs ts'ē'kumL.
Sitting on the beach it is said the bird headdress at TE'ng·îs. Then it is said he took it his bird mask.
Wä! laa'm lāwōdêL xēs ts'ē'kumL, laa'm Lē'qadês NEmō'guîs. Laē
Wä! then he took it off his bird mask, then his name NEmō'guîs. Then
bā'xus'it. Lā'laē LE'x'uît qa s lē mā''wa lāx K·'ā'qa. Laa'm xu'ngua- 10
he became a natural man Then it is said he moved that he went carrying goods in canoe to K·'ā'qa. Then he had a
dix·'it ês Ō'maxt'ā'laLēg·ilak^{u}. Hā''lōLts'âlaal q'oā'x'ēdē da g·înā'nEmē
son of Ō'maxt'ā'laLē to be. Growing fast it is said growing the child
xunō'k^{u} as NEmō'guîs. Lā'laē hēiLats'âx·'ida, laa'm Lō'k'uēmas'ida.
the son of NEmō'guis. Then it is said he became a man, then he grew strong.
Lā'naXua laē qā's'it Ta'wîs qulē'ē Lō'La'watsaxLā'laē qulē'ya s Ō'maxt'-
He went walked with his uncle Lō'La'watsa on him (his name) it is said the uncle of Ō'maxt'-
ā'laLēg·ilak^{u} qa s lē kuē'xa xa mē'guat lax LEmā'îs as Tsā'xîs. Â'ma
ā'laLē to be that he went clubbing the seals at the beach of Tsā'xîs, Only
wīsLa laē ā'wag·ilisEla kuē'xa lāx LEmā'îs as Tsā'xîs lā'xa mē'guat. 15
there it is said walking to and fro on the beach clubbing at the beach of Tsā'xîs at the seals.
"Adē'," nē'x·lata NEmō'guîs lāxîs ts'ā'yē Lō'La'watsa; "Soā'LEla sEns
"Friend," he said NEmō'guîs to his younger brother Lō'La'watsa; do not let us
hēquä'lē yā'wix·'idag·a x·îns qa yā'yats'ē sEns xunō'kuēx." Laē
go on in this way let us act us to go on the sea our son this." Then
awulX'ētEx yā'nEma sês xunō'k^{u} xēs kuēxā'nEmē da q'ā'sa To mē'guat
he desired more game of his son his what he clubbed the sea otter and seal
lā'xa LEmā'îs as Tsā'xîs qa lāxlak·ala g·ēLtsōx lā'xa da maa'mk·âla.
at the beach of Tsā'xîs to go repeatedly for him to the the islands.
Lā'laē NEmō'guîs TEwis ts'ā'ya k'u'mElts'ōt xa wēlk^{u}. Lā'laē laE'lx- 20
Then it is said NEmō'guîs and his younger brother burnt inside the cedar. Then it is said they burnt

[1] Sun giving light to the world in the morning.

1 bEnt xēs LĒ′qa. Lā′laē Ƨoā′LamāsEq, laē wī′uxstEndaq xēs LĒ′qa
the ends his canoe they were building. Then it is said they finished, then they launched it his the canoe they were building.

îs xōnō′kᵘ. Lā′laē mE′ns'aLa'yodē da g·înā′nEmas îs alē′wats'ēL
of the son. Then he tried it on the water the his child of the hunting canoe (future)

lax Watsō′lîs. NEma′L'ētbidō. Lāt'exs g·ā′xaē nē′nakᵘ laē qō′t'amā′s
at Deer Island. He was angry a little. He came home it is said full he made

xēs Xuā′k'una yisa q'ā′sa ꞇEwa mē′guat. Xuā′Xuilaqat'ā′la amlaa′e
his canoe those sea otters and seals. He continued to go out it is said

5 da g·înā′nEmē xōx nē″nalax. Laa′m q'ayō′L xa q'ā′sa ꞇEwa mē′guat.
the child the every day. Then much the sea otters and seals.

"Dō′qoaLag·a, adē′ qEns gu′ng·ilîsalag·i q'ā′q'oL'āLEla xōx wā′xaāsaq'a
"Look, friend, we will try to discover the how many

sEns g·ō′Lg·okulō′ta qa lā′lag·iLtsē LĒ′lalasōt. Lā′laē sē′x'uidē ts'ā′yes
our tribes that some one go to invite them. Then it is said he paddled his younger brother

yîx L'ō′Lawas. LāL lax La'lā′tē Le′la lax Hai′alik·auwaē. G·ā′xlaē
that L'ō′Lawas. He will go to La'lā′tē to invite at Hai′alik·auwaē He came

lāx Qag·'axstE′ls, LĒ′la lax Mā′tag·i'la. G·ā′xlaē lax G·'ō′taqa'la LĒla
to Qag·'axstE′ls, he invited at Mā′tag·i'la. He came to G·'ō′taqa'la he invited

10 lax Lau′itsîs, L'ā′xLaqoaXLē laē da bEguā′nEm. G·ā′xlaē lax Sē′lats'ē
at Lau′itsîs, L'ā′xLaqoa on him it is said the man. He came to Sē′lats'ē

qa s LĒ′la lax Mā′lēlēqala. G·ā′xlaē LĒ′qolîs lāx LĀ′L'aq'uxLa. Lā′lae
that he invite at Mā′lēlēqala. He came moving to LĀ′L'aq'uxLa. Then

LĒ′la lax Ts'ē′nx·q'aiō. G·ā′xlaē lax Tā′yaxqōL qa s LĒ′la lax Lā′lax-
he invited at Ts'E′nx'q'aiō. He came to Tā′yaxqōL that he invite at Lā′lax-

sent'aiō. Lā′laē L'ā′sta lā′xa g·ōkula lāx Q'ō′quēt'axsta'yō qa s LĒ′lalē'x
sEnt'aiō. Then he went out to the town at Deer Island that he invite

Wā′xap'alasō. Lā′laē nE′lbEnt lax Â'g·iwa'laa′ qa s LĒ′lalē'x Nū′mas.
Wā′xap'alasō. Then he went up the river to a point to Â'g·iwa'la that he invite Nū′mas.

15 Lālaē nE′lg·iLē qa s lē lax LîXsī′waē. Lā′laē LĒla lax Sâ′g·i'yē.
Then he went up the river on the water that he go to LîXsī′waē. Then he invited at Sâ′g·i'yē.

G·ā′xlaē lax XutsEtsâ′lîs qa s LĒ′lalēx YiXā′qEmaē; lā″laē lax nE′lk·'-
He came to XutsEtsâ′lîs that he invite YiXā′qEmaē; then at the right

utas LîXsī′waē qa s LĒ′lalēx SE′nLaē. Lā′laē sē′x'uit qa s lē lax Ō′s'Eq
side of the river of LîXsī′waē that he invite SE′nLaē. Then he paddled that he went to Ō′s'Eq

qa s LĒ′lalē'x Hē′ilik·ina′kula; lā′laē lax Nā′laxLala axās Ts'ā′watē
that he invite Hē′ilik·ina′kula; then at Nā′laxLala near Ts'ā′watē

ā′waxsta'yas qa s LĒ′lalē'x YĀ′xLEn.
mouth of inlet that he invite YĀ′xLEn.

20 Laa′m lā′La xonō′kᵘas NEmō′guîs yā′la kuē′xa alē′Xua qa LĒ′lanEmLa
Then he was going the child of NEmō′guîs always clubbing sealing with the spear for guests (future)

sîs ōmp. Laa′m lā′La qau′t'a g·ō′kᵘ asē xa q'ā′sa Xoa nā′Xua
of his father. Then he was going full house his the sea otters the all

Xahai'p'ōm qa nEX'u'nē sa g·alē. Hai'Em q'ā'q'anōLē. NE'mxsaEm 1
furs for blankets of the first ones. That was sewed together. One

laē nā'lē g·ā'xtEmasa lē'lqolaLaē qap'ē'x·'it. Lā'laē LĀ'lēlala xēs
it is said day they came tribes gathered. Then it is said his invitation met them his

LĒ'lanEm. Lā'laē yē''qumag·alīLa xa mē'guatē lāxîs LĒ'lanEm.
guests. Then it is said he distributed the seals to his guests.

Lā'laē q'ā'g·a'lēlEm ꟾē yaai'qoēmaLa sa g·ī'g·iqamayē. Laa'm g·ī'qēla
Then it is said he gave them their seats and their gifts of the chiefs. Then he kept for them

LĒ NEmō'guîsā sa haq'oā'yū. Lā'laē sa ts'ē'koayū lax g·ī'qEma'ya sa 5
NEmō'guis of the belly part. Then it is said of the hind legs to chief of the

nE'msqEmakuē lē'lqolaLa. Lā'laē sa qE'lq'ayū lax guē'LElē sa
other one tribe. Then it is said of the flippers to second rank of the

g·ī'qEmā'ya. Laam la LĒ da ō'guida'ya sa mē'guat lā'xa bEguā'nEm
chiefs. Then future the body of the seal to the men

q'ā'laam. Wä! Laa'm g·ā'la xa g·ī'laL qa ꟾā'ꟾaXumē sa
common. Wä! Then first the made for standing first of the

nā'Lna'mēma's. Lā'laē dā'x·'id xa haq'oā'yū qa s yā'X'uidEs lā'xa
clans. Then it is said he took the belly part that he give it to the

kuē'k^{u}. Lā'laē q'ix·'ī'da laq qa s ts'owē' s lā'xa ts'ā'ts'owē'mēL. HaiEl 10
eagle (highest chief). Then he bit off there that he gave it to those who passed it to the guests in the house. Then it is said

qoē'g·i'laEl q'oā'LxŌ a'mlaē q'ix·ī'de nā'Xua xēs yā'X'uidayū. Laa'm
he did every it is said he bit all his what he gave. Then

LĒ'qadês Wā'las NEmō'guîs. Laa'm xaā'wîs LĒ'x'ēt xēs Lawu'lyama'ya,
his name Wā'las NEmō'guis. Then also he named his successor.

laa'm Ō'maxt'ā'laLēXLa. Lā''laē yāX'uitsa q'ā'q'ēnuL. Laa'm laē
then it was Ō'maxt'ā'laLē on him. Then it is said he distributed sewed together (fur blankets). Then it is said

nā'LnEmēmaxElāx t'êx·ī'la qa t'êx·î'la sa ā'La bEguā'nEm. Laa'm
the clans making road (law) for road (law) of later men. Then

xak·'ē'da waō'kwē LĒ'lanEms. Laa'm g·ō'kulōdadas. 15
they stayed some his guests. Then they became his tribe.

"LamEn lāL qoā'qoēsg·iLts'â'LaL," nē'x·laē Ō'maxt'ā'laLa xîs ōmp.
"I go shall go farther this time," said Ō'maxt'ā'laLē to his father.

"K·'ēsLEs nā'nuXLōL. La mawē'sLāLEn la'stêx'ī'dêL." "Hā'g·a!"
"Not you shall you expect me I will go first I will go to bathe." "Go on!"

Lā'laē qā's'idē Ō'maxt'ā'laLaya xa qaā'la. Laa'm lā'wîs xō'sit'ēt laē
Then it is said he walked Ō'maxt'ā'laLē the morning. Then it is said he bathed it is said

wuLa'x'aLEla xa k·'îmL'āla. Lā'laē O'maxt'ā'laLaē dō'x'uaLEla xa
he heard the sound of adzing. Then it is said Ō'maxt'ā'laLē saw the

q'ō s wāp. Lā'laē k'uā'g·aals qa s xō'sētetē lāq. G·ā'xlaē nE'Xua'- 20
a pond of water. Then it is said he sat down that he bathed there. It came the sound

xstîx·'ī'dē da k·'î'mLāla. Lā'la'xaa qā's'idē O'maxt'ā'laLē laa laxaas
came nearer the sound of adzing. Then again walked Ō'maxt'ā'laLē then it

qoē′sa'xstîx·'idē da k·'î′mLāla. Lā′la'xaa nEqElsā′ xa wāp qa s
far went the sound the sound of adzing. Then again he reached the water that he

xō′sēt'itē. G·ā′xlaē nEXuaxstix·'idē da k·'î′mLāla. Lā′laē qā′s'it.
bathed. It came the sound came nearer the sound of adzing. Then it is said he walked.

Lā′la'xaa qoē′sa'xstanakulē da k·'î′mLāla. Lā′la'xaa q'ā′xa wāp qa s
Then again far sound moved the sound of adzing. Then again he found water that he

xō′sid'ētē lāq. G·ā′xlaē da k·'î′mLāla nExuā′Labēda'. Lā′laē qā′s'idē
bathed there. It came the sound of adzing near a little. Then he walked

O'maxt'ā′laLaya. Lālaē dō′x'uaLEla xa g·ā″lō. G·'oā′xtsō'sa bEguā′-
Ō'maxt'ā′laLē. Then he beheld the canoe. He was sitting in the canoe a

nEm k·'î′mLāq, k·ā′dēg·ō'ls xa mā′stō ⊤ōa sē′wayō maLtsE′ma.
man adzing. It lay in the bow of the canoe the harpoon and the paddles two.

Â′Emlawîsē Ō'maxt'ā′laLaē Lā′wap'Elsa xa bEgwā′nem. Hai′malaxōL
Only Ō'maxt'ā′laLē stood behind him the man. That had been

mā′g·ag·uXLē. Lā′laē Ō'maxt'ā′laLaē yā′q'ēg·aL!" Qē′lak·asla xg·în
grouse on him (his name). Then it is said Ō'maxt'ā′laLē spoke: "Thank you that I

⊤ō′kualēL g·āxs ya′lag·îltsēwā′qōs, qāst!" Â′Emlawîsē da mā′g·ag·u
found a magical treasure this your work on the ground, friend!" Only the grouse

dō′x'uēdax O'maxt'ā′laLaē, lā′laē x·îs'ē′da. Laam ⊤ō′kualē Ō'maxt'ā′-
looked at Ō'maxt'ā′laLē, then he disappeared. Then he found a magical treasure Ō'maxt'ā′-

laLaya xa g·a″lō ⊤Ewa mä′stō ⊤ō sē′wayō.
laLē the canoe and the harpoon and paddles.

Lā′laē ax'ā′Laxsā xēs ȣu′nk·în q'alqu. Ma'Ltsâ laamlaē ⊤awîs q'ulē′ē
Then it is said he put into the canoe his nettle line. Two only then it is said and his uncle

L'ō′L'awatsē. Laam lā′k·'ōtēsL. Lā′laē LA′sqEmdax Sā′lōts'a. Lā′laē
L'ō′L'awatsē. Then he went across. Then it is said he aimed at (steered for) Noomas Island. Then it is said

dō′x'uaLEla xa siō″nakula g·ēg·ilaal lāx Yaai′Xugīwanu. Laa′m
he beheld the paddling canoe started from it is said form Yaai′Xugīwanu. Then

k·î′mqaunakula LE'wē lax Sā′lōts'E. Lā′laē qE′lqEpōx'uît. "Qē′lak·asla
they met and at Sā′lōts'E. Then it is said each held the sides of the other's canoe. "Thank you

nEmuō′t," nē′x·laē Ō'maxt'ā′laLa yax Qā′watiliqala. "K·'ē′sEn
brother," said Ō'maxt'ā′laLē to that Qā′watilEqala. "Not I

wuLE lā′g·iLa," nē′x·laē O'maxt'ā′laLa. "Iā′laqEmEn La sEn ō′mpē qEn
nothing on account of," said Ō'maxt'ā′laLē. "I am sent by my father that I

g·ā′xēlōL qāxs hē′x·aēnē mā″laōs hē′Lō lāx qEg·ā′taas." "Qē′lag·a!"
come to you for you the only one what you right from to take a wife." "Come!"

nē′x·lata Qā′watilEqala lax Ō'maxt'ā′laLē qan lā′lag·i sē′wik·ElōL
said Qā′watilEqala to Ō'maxt'ā′laLē that I go you paddle behind me

qa s lā′os lā′xEn g·ō′kua." "Lā′lax·ī′ g·în q'ā′luXdē g·în lōL nE′muōt."
that you go to my house." "Go this my harpoon line past my to you, brother,"

nē′x·laē O'maxt'ā′laLa yîx Qā′watilEqala. "Yî′xa ȣu′nk·'în q'a′lkoa
said Ō'maxt'ā′laLē to Qā′watilEqala. "That my nettle bark line

⊤awîs mä′stuXdē ⊤awîs Lē′wiXdē." Lā′laē Qā′watilEqala au′guaqa
and his harpoon past and his mat past." Then Qā′watilEqala also

lā sîs k·'ilx·ī'waX'unXdē q'Elk^{u} lā'xîs nE'muōt. Â'amlawîs lā Lā'yâp'a 1
went his leather line past line to his brother. Only it is said they exchanged
sîs alē'wats'ēXdē. Wī'laam la g·ī'g·axsax yā'yats'ix·dēs. "Hētsâ'-
their hunting canoes past. Everything things in the canoe canoes which they had used. "Let us
x·îns qoā'qoaeaqanōX g·ō'kuē hai'mē da kuā'x·ilas," nēx·laē O'max-
go go back us house there the smoking," said Ō'max-
t'ā'laLē. "ꝺoā'la," nē'x·lat'a Qā'watilEqala "haî'Emax·îns ȝoā'ȝoaē-
t'ā'laLē. "Don't," said but Qā'watilEqala "we will go on
aqan g·ō'kun. La'maaqos nē'x·sēs wā'LdEmōs xēs g·ā'yâ'laēnayōs." 5
my my house. Then you you said your word its you want to be engaged."

Lā'laē sē'x'uit hama'Lts'aqâla g·iLēXdaôx. Lā'laē lāx siōlisā xawa lax
Then they paddled side by side together. Then to lower part of river they were at
Guā'ē. "Â'EmLîs yā'L'âLōL nE'muōt; qēnsō laēL lāxEn g·ō'kua.
Guā'ē. "Only you take care, brother; when we enter at my house.
T'ē'p'axLaXsītsē a'mLís g·ā'xEn;" nē'x·laē Qā'watilEqala xîs nE'muōt.
Follow on my heels only me," said Qā'watilEqala to his brother.
Lā'laē nē'Lasēxs iā'xsamaē t'êx·î'lē sīs g·ōk^{u} lā'xîs nE'muōt. Lā'laē 10
Then he told its badness the door of his house to his brother. Then it is said
hō'x'usdēs qa s lē lā'xa t'êx·î'la. Lā'laē a'qalsē da qoā'wina. Lā'laē
they walked together that they go to the door. Then it is said it opened on the ground the raven. Then it is said
dawē'Lē da nE'muōtâla. Lā'laē k·î'mq'ag·aLē da qoā'wina t'êx·î'lês
they jumped the brothers. Then it is said it snapped the raven its door
g·ō'kuas Qā'watilEqala. Nā'Xua Em lā'La q'oēq'ulālag·îlīLē k·'ē'k·'akua
his house Qā'watilEqala. All it is said alive in the house carvings
sa g·ō'kuas Qā'watilEqala. Q'oē'q'ulālaē da ꝺā'mē, sī'siūL laē da
of his house Qā'watilEqala. Alive the posts, sī'siūL it is said the
k·ā'tēwaē. Laa'm qig·ā'tix·idês Wî'lx·stasīlayuqoa xonō'kuas Qā'wati-
beams. Then he was married to Wî'lx·stasīlayuqoa his child Qā'wati-
lEqala. Wä! laa'm g·ō'ku'lxLayīt da g·ō'kuē ꝺEwa k·'ē'k·'ês'ō LEwa 15
lEqala's. Wä! then the house was given to him in marriage the house and the carvings and
nā'Xua qa s quē'xstEm xa hamā'yē q'ā'q'anōL wā'lasx·ē, kuē'kuxtē,
all for his different kinds the food blankets lynx, marmot,
nā'LēsqEm, mā'tsasqEm, alā'k·îm. Wä! laa'm g·āx sē'wodayū sēs
wolverine, mink, dressed elk. skins Wä! then they came they took him home his
nEgu'mp Lawîs g·ō'kulōt. Wā'wi'lāxsa amlaē g·ā'xē da g·ō'Xdē.
father-in-law and his tribe. Everything it is said came the house past
Laa'm g·ō'xwulsa sa g·ō'kuē lāx K·'ā'qa. Hai'mîs lā'g·īLs K·ā'qaXLē
Then he built a house on the ground of the house at K·'ā'qa. Therefore K·'ā'qa on it (its name)
da awī'nak'uîs qāxs lā''yōL k·'ā'xsēstEndEx K·'ā'qa qa g·ō'kwēatsa 20
the land for long ago logs placed all around K·'ā'qa for place of house
g·ō'kulXLēXdē. Laa'm Lē'Ltsē'stālisa O'maxt'ā'laLaya sēs qEg·ā'danEm
house obtained in marriage. Then he invited all around Ō'maxt'ā'laLē with his what he had received from his wife
lā'xa g·ā'lē lē'lqolaLē.
to the first tribes.

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HŌ′XKOKᵘ.

Nē′sa laē da ts'ē′daq lax Yū′Layē xa ts'ā′k·us. Lā′laē ts'ExLā′la xa
Pull out it is said the women at Yū′Lē the fern root. Then it is said they put it over the fire the
mu′mXsEmakᵘ. G·ā′xlaē da ō′qoanē xā′pa xa mu′mXsEm xa q'ē′nEm
dried whale meat. They came the owls picking up the dried whale meat the many
laē da ō′qoanē. Lā′laē dō′x'oaLEla xa hō′xhokᵘ. G·āx g'uā′xtōt xa
it is said the owls. Then it is said they discovered the hō′xhokᵘ. It came sitting on top the
Lōs; g·ā′xlaē ba'nūLEla ᵀE′nLa xa ō′gwēnē sa wîlkᵘ. G·ā′xlaē lāx
tree; it came it is said downward pecking the trunk of the cedar. It came it is said at
5 ōxLā′ya sa wîlkᵘ. Laē wāxLā′x'umx·'idē da hō′Xhokᵘ lēxoa xēs
butt of the cedar. Then it found it difficult the hō′Xhokᵘ for its
x·î′ndzas. Lā′laē qā′s'idē da hō′Xhokᵘ qa s lē′ laxa ts'ē′dax.
beak. Then it is said it walked the hō′Xhokᵘ that he went to the women.
Na′wîLbē lat'ē da hō′xhokᵘ, la bEguā′nemxs g·ā′xaē lā′xa ts'ē′daq.
It covered its nose but the hō′Xhokᵘ, it was a man he came to the women.
Lā′laē axLEnde sa mō′mXsEm. Lā′laē Lîpa′mlēLa sa Lē′waē.
Then it is said they put on fire of the dried whale meat. Then it is said they put it before him of the meat.
Lā′laē g·ētsu′dE sa mō′mXsEm lā′xa Lē′waē. Lā′laē yā′q'ēg·aLē da
Then it is said they put on to it of the dried whale meat. on the mat. Then it is said he spoke the
10 hō′xhokᵘ: "K·'ē′sEn hā''mapa Xoa mē′mXsEmēX. Yū′den
hō′xhokᵘ: "Not I eat the dried whale meat. This my
ha'mā′yuX da LE′qoax sa bEguā′nEmēx." Â′Emlaē nē′k· da
food the brain of the men." Only it is said he said the
hō′Xhokᵘ, lā′laē LE′nL'idē da hō′Xhokua xa ts'ē′daxdē. NEmō′kᵘ
hō′Xhokᵘ, then it is said he pecked the hō′Xhokᵘ the women past. One
lat'ē′da wu′nx·'idē. G·āx nē′nakᵘ qa s ts'Ek·'ā′Lalēs. Lā′laē da
but hid. She came home that she reported. Then it is said the
Naqô′mg·ilisala nēk· qa s lē wī′na xa hō′Xhokᵘ· Lā′laē
Naqô′mg·ilisala said that they went to make war upon the hō′Xhokᵘ. Then it is said
15 Q'ō′mk·ustâls ᵀō Wā′xalalaa ax'ē′ida xa ē′d'Em sa ts'ēdā′q qa
Q'ō′mk·ustâls and Wā′xalalaa took the menstrual blood of the woman that
s kwä′s'idēs. Lā′laē wī′na xa hō′Xhokᵘ. Lā′laē lāx ax'ā′sdē sa
they washed. Then it is said they made war upon the hō′Xhokᵘ. Then it is said they went to the place of the
ts'ē′daqdē. Lā′laē lā′xLala sa mōmXsEm. G·a′xlaē da ō′qoanē.
women past. Then it is said they put over fire of the dried whale meat. They came it is said the owls.
Lā′laē dō′x'oaLEla xa hō′Xhokuaxs g·ā′xaē g'uā′xtut xa wî′lkuē.
Then it is said they discovered the hō′Xhokᵘ came sat on top the cedar.
G·ā′xlaē ba'nōLEla ᵀE′nᵀEL'anē xa wî′lkoē. Lā′laē lāxa ō′xLaē.
It came it is said downward pecking the cedar. Then it is said to the butt of the tree.
20 Lā′laē xak·'a′ x·î'ndzasdês lāq. Lā′laē dzE′lX'uidē Q'ō′mk·ustâls ᵀō
Then it is said it jammed its nose past there. Then it is said they ran Q'ō′mk·ustâls and

Wā′xalalaa qa s kuē′x'idēx x·î′ndzasdês. Laa′m k·ō′x'uidē x·î′n- 1
Wā′xalalaa that it struck its nose past. Then it broke its nose
dzasdês. G·ā′xlaē Lā′XLandês lā′xa la′q'us. Laa′m Lā′la.
past. They it is came said pushing it into into the fire. Then it was dead.

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THE GHOSTS.

G·ō′kula laē K'oā′La ʇawis sā′sEm lā′xa ai′k·'ē awī′nakuisa. Hē′iEm
Living in a house it is said K'oā′La and his children at the above country. That was
xonō′Xsē yîx Q'ō′masdaX xa nō′la, hē′misē Haiā′qolaL mā′k·ilax Lō
his son that Q'ō′masdaX the eldest, that Haiā′qolaL next one and
Nōlak·as hē′imîsLa A′nqolak·as. Lā′laē hayutâla ʇō Ts'î′lqoalōLEla 5
Nō′lak·as and that one A′nqolak·as. Then it is said they were rivals and Ts'î′lqoalōLEla
hē′imîs sā′sEmsē Sē′paxîs Lō Yā′q'EntEmayē ʇō G·ē′xdEn. Lā′laē
that his children Sē′paxîs and Yā′q'EntEmayē and G·ē′xdEn. Then it is said
Ts'î′lqoalōLEla nēk· qa s g·ā′xē lā′xoa banē′x awī′nakuisa. Lā′laē
Ts'î′lqoalōLEla said to come to the lower world. Then it is said
ē′axEla xa Lā′qoak·En laa′m t'ēx·î′LdEng·ilax qa s ꞩE′lbEL'anēsō ʇEwis
using the copper post that was making a ladder to climb down and his
sā′sEm. Lā′laē nē′k· qa s haLā′qasēwi sēs hayō′t. Lā′laē q'ā′lalaē 10
children. Then it is said said to be played with by his rival. Then it is said he knew it is said
K'oa′Lax wā′LdEmas Ts'î′lqoalōLEla. Lā′laē qā′s'idē K'oā′La. Lā′laē
K'oā′Lax his word Ts'î′lqoalōLEla. Then it is said he walked K'oā′La. Then it is said
mō′p'EnXuas qā′sa. Lā′laē dō′X'oaLEla xa neg·ä′ qoā′xanakula
four days he walked. Then it is said he discovered the mountain growing
g·ē′x·'it lā′xoa ba'nēx awī′nakuîs. Lā′naXua lats'ō′t xans ai′k·'ē
from the lower world. Going sometimes reaching our upper
awī′nakuîs. Lā′laē nē′nak^{u} qa s nē′iLē xēs sā′sEm. Hē′ix·'ida am
world. Then it is said went home to tell his children. Right away
lawîs xoā′naL'ē da ʇawis sā′sEm. G·ā′xlaē lā′xēs ax'ā′sdē k·'ē′slat'a
it is said they prepared and his children. They came to the place (past) not however
qä′Laxs g·ā′xaē da nEg·ä′ äi′k·'ōLEla ē′it'ēt da g·î′l'Em lawîs ladzō′t 15
long came the mountain upward again the as soon it is said it reached
xEns nā′lax. Laē K'oā′La nēk· xēs sā′sEm: "K·'ē′sLEn lā′sqamēLōL.
our sky. Then K'oā′La said to his children: "Not I follow you.
Hā′g·a laams leꞩuxLä′laLEx Pēpā′wiLēnōx. Â′Em LES g·āx nā′XuaL
Go you the name of your tribe will be Pēpa′wiLēnōx. Only you come sometimes
axLāla xEn k·'ē′k·'Es'ōx," nē′x·laē xēs sā′sēm. G·ā′xlaē Q'ō′masdaôx
take my carvings," he said it is said to his children. They came it is said Q'ō′masdaôx·
ʇō Hä′aqolaL ʇō Nō′lak·as hä′imisē A′nqolak·as. G·ā′xlaē lax 20
and Hä′aqolaL and Nō′lak·as also A′nqolak·as. They came it is said to
Q'oaLE′mtsîs. Lā′laē qā′s'ida â′läXwa lā′xa lā′xēs ā′Labāla-
Q'oaLE′mtsîs. Then it is said they walked looking for a river there at the walking in

1 ē′nayalaal lāx Ē′wala. Lā′laē q'ā′xa ꞇas lāx awī′Lpa'yas Ē′wala.
the woods at Ē′wala. Then it is said they found post at its point Ē′wala.

G·ā′xlaē Q'ō′masdôx ꞇō Hä′aqolaL aē′daā′qa. Lā′laē ma′ng·a-
He came it is said Q'ō′masdôx and Hä′aqolaL coming back. Then it is said keeping

LaxstalēsElā′xs g·ā′xaē nē′nakᵘ. Lā′laē lā′g·aa lā′xa ōtsâ′lîs.
close to the beach came home. Then it is said they arrived at the bay.

Lā′laē la'axLā′lēsaq. Lā′laē dō′x'oaLEla xa koā′x·ila. Lā′laē lā′g·aa
Then it is said going to its head. Then it is said they discovered the smoke. Then it is said they arrived

5 lāq. Lā′laē laēL lā′xa g·ōkᵘ. Ma'lōkᵘ lat'ē da ts'ē′daq ts'ē′sa xa
there. Then it is said they entered at the house. Two however the women roasting the

g·ā′wēq'ānEm. Lā′laē yā′q'ēg·aaLē Q'ō′masdôx ꞇō Hä′aqolaL. WuLā′
clams. Then it is said they spoke Q'ō′masdôx and Hä′aqolaL. They asked

xa ts'ē′daq wēs g·ē′x'idē. Nē′Xsō laē da ts'ē′daqas Q'ō′masdaôx.
the women where they came from. They were told by it is said the women by Q'ō′mosdaôx.

Lā′laē nā′naxmayē da ts'ē′daq: "Hē′danuX g·ē′x·'idē da ai′k·'ē
Then it is said they replied the women: "We came came from the above

awī′nakuîs. K·'ē′osnuX bEguā′nEma." Lā′laē nē′La Q'ō′masdâx lā′xa
world. None we have men." Then it is said Q'ō′masdaôx to the

10 ts'ē′daq: "K·'ēos amxaanōX ts'Edā′qa. Wīx·'idasēxs g·ā′xaēx g·ā′xa-
women: "Not we having women. How did you come when you

axa?" Lā′laē yā′q'ag·aLē Wi′yōlēnēqa; hēiEm ꞇē′qEm sa nEmō′kuē
came down?" Then it is said she spoke troublesome woman; that was the name of the one

ts'Edā′q. Wī′oLasōgui'lakᵘLē da nEmō′kuē: "Hanē′naXuanōX
woman. 'Making tired' on the other one: "Bringing us (?)

lā′xa nExā′q. Hē′imîs g·axtaōt g·ā′xEnōx lā′xoa." "Qē′lag·a qanōX
to the geese. That brought us here." "Come now to us

qeg·ā′daōs." "Mō′laxLälaē da ts'ē′daq as wā′LdEma sa nE'mē′ma.
to be our wives." Glad were it is said the women of the word of the brothers.

15 G·ā′xlaē nä′nadôxLē da nE′mē′ma ꞇawîs ꞩaꞩanE′m. G·ā′xlaē.
They came it is said home they the brothers. with their wives. They came it is said.

G·ā′x'aLEla lāx Q'oāLE′mdzīs. Hē′ix·'ida am lawîs bēbEwē′X'idē da
They came to to QoāLE′mdzīs. At once it is said they were with the child

ts'ē′daq. Lā′laē mā′yuL'idē da ts'ē′daq. Lā′laē ꞇē′x'idês La′q'oasqEm.
women. Then it is said they were confined the women. Then it is said they named him La′q'oasqEm.

Hā′labalaal q'oā′x'ēt da g·înā′nEmē. Lā′laē amLē da g·îng·înā′nEm lāx
Quick it is said grew the child. Then it is said played the children at

wā′balisās Q'oaLE′mdzīs. Lā′laē hē′ōdē La′q'oasqEm lāx ōguä′qa'ya
river in corner of Q'oaLE′mdzīs. Then it is said he fainted La′q'oasqEm at that side

20 sa wā'. He′x·'ida Em lawîs la nē′Lē xa nEmō′kuē g·înā′nEmax
of the river. At once it is said he went told the other boy

Q'ōmasdaôx. G·ā′xlaē Q'ō′masdaôx dō′x'uida xēs xunō′Xdē â′la am
Q'ō′masdaôx. He came it is said Qō′masdaôx he saw his child past really it is

lawîs LE′la. Hē′x·'ida am lawîs wunEmt'ē′dEq xēs xonō′Xdē. Laa′m
said dead. At once it is said he buried it his child past. Then

lawîs ʒā′nuL′ida. Lā′laē da g·înā′nEm q′ulā′x·′ida qa wī′x·′idēs 1
it is said it grew night. Then it is said the child revived to unable to do anything

qaxs g·ī′tsâē lā′xa xtsEm. K·′ēslada qä′La ʒā′nuL g·ā′xaē wuLEla
because he was inside in the box. Not then long dark he came he heard

xa yaēq′Entālê. Lā′laē axō′dax yikwayā′ya sa dEk·ā′ts′En. Hē′ix·′ida
the talking. Then it is said he took it off the cover of the grave. At once

am lawîs Lē′lalasawī da lāXdē LE′la. Lā′laē qā′s′idayō lā′laē lā′xa
it is said he was called the one who had been dead. Then it is said they walked with him then to the

Lē′xk·′ala. Lā′laē q′aq′ā′qEmlasawī da g·înā′nEma sa yū′dokwē 5
beating of boards. Then it is said he was asked to be careful the child by three

bē′bEgwanEma xa lēlâ′lēnôxoaxōL. Lā′laē laē′L lā′xa kuē′xalatsē,
men the ghosts. Then it is said they entered at the dancing house,

k·′ē′slata la′g·ōlīL lā′xa g·ōkᵘ. Hē′laē g′oā′x·′idē nEqō′yâliLa sa
not however they went to the rear of the house to the house. There they sat the middle of the

hēiLk·′ōda′nēʒuīLa sa g·ōkᵘ. Wē′g·a yā′LâLax nē′Xsōlaē Lā′q′oasqEm.
right side of the house. Go on! take care he was told Lā′q′oasqEm.

Nā′XuaamLEs ā′xēlanā′kula xēs dō′dEʒuLōs LEwa q′E′mq′EmdEm.
Everything you will keep in your mind your what will be seen by you and the songs.

K·′ē′s′EmLaxaā′wîs ha′mx·′ida xa ha′mg·ilayōLalōL. Ʇā′xôyē laē da 10
Not then you eat the your food. He stood it is said the

bEguā′nEm dā′la xa q′oē′ts′ayū. Lā′laē yā′q′ēg·aLē g·ē′qama′ya sa
man holding the rattle. Then it is said he spoke the chief of the

lēslâ′lēnôx, Lē′qadês Hamā′maxayals: "G·āxts′â′x·ō wē′sax lā′g·ulē′sa."
ghosts his name Hamā′maxayals: "Let him come this boy to the rear of the house."

"ƍoā′la," nēk·lat′ē da nEmō′kuē lā′xa yū′dukuē bē′bEguanEm. Lā′laē
"Don't,' said however the one at the three men. Then it is said

ʒoā′L′alēLē da t′E′msElaXdē. Lā′laē ō′dzaq′alē da g·înā′nEm.
he finished the dancing. Then it is said uneasy the boy.

Lā′laē Hamā′maxayals hāyā′Lō lā′xîs g·ō′kulōt: "La′mEns lāL 15
Then it is said Hamā′maxayals told to his tribe: "Let us go

taau′t LExoa g·înā′nEmēx lā′xîs g·ō′koa. Lā′laē da lēslâ′lēnôx
take that this boy to his house. Then it is said the ghosts

ax′ē′ida xa p′alE′ms, qa s LExaxLälaXdaôxuēq. Lā′laē ō′guaqāsawī da
took the moss that they put it on their heads. Then it is said also it was done the

g·înā′nEm axaxLä′la xa p′alE′ms. G·ā′xlaē g′oā′g·aalsē da g·înā′nEm
boy put on his head the mess. He came it is said sitting on the ground the boy

lā′xoa nō′saqEns awī′nak′uîs. Laa′mXdalāLa Ʇē′xs′alāsō sa pa′xala
to the our own world. He was already told to take care by the shaman

yîx Hē′Lilälag·ilîs qa axē′isē qa kuä′tsē qa ēs g·ō′kulōt, la′laē 20
that Hē′Lilälag·ilîs to take the urine for his tribe, then it is said

hā′mamaxē awī′Estäis k′oaē′tsasas. Lā′laē Q′ō′masdaôx LEwīs qEnE′m
they cried hamama all around to wash with. Then it is said Q′ō′masdaôx and his wife

ha'mā'p. Laē wuLāx'aLEla xa hā'mamaxä'. Lā'laē dzî'lx·ēwuls lāxîs
ate. Then he heard the sound hamama. Then it is said they ran out of his

g·ōk^{u} qa s dō'X'uidēq. Hē'Em dōx'oaLElatsē xēs xonō'koaxs
house that they saw. Him they discovered his his son

g'oasa'ē lā'xa awī'nakuîs. Lā'laē nē'La xēis qEnE'm. G·ā'xlaē qEnE'-
sitting on the ground on the ground. Then it is said he said to his wife. She came it is said his

mas dō'x'uidEq. Lā'laē māLt'ēg·oāLEla xēs Xonō'k^{u}. Hē'x·'ida am laē
wife she looked. Then it is said they recognized their child. At once it is said

q'ug·āL Lā'q'oasqEm xîs ōmp: "Hā'g·a ax'ē'idax k'uē'tsä qa s xō'sEla
shouted Lā'q'oasqEm to his father: "Go take urine that you sprinkle

laxs g·ō'kulōtaq'ōs. La'laē dzî'lx·'uidē Q'ō'masdaôx. G·ā'xlaē dā'la xa
on your tribe. Then it is said he ran Q'ō'masdaôx. He came it is said took the

kuä'ts'ē. Wī'la am laē g·ā'xē g·ō'kulōtas. G·ā'xmaālaxōL nē'LExstEls
chamber. All it is said came his tribe. They had come showing their mouths

nā'xuē da lēslâ'lēnôx. G·î'l'Em lawîs hai'aqē da waō'kuē bē'bEguanEm
all the ghosts. As soon it is said passed the some men

lax sE'ms sa lē'lâlēnôx, laē hamā'maxē da lē'lâlēnôx. Hē'x·'ida am
at the mouth of the ghosts, then they cried hamama the ghosts. At once it is

lawîs Le'Lalē da bē'bEguanEmXdē xa hai'aqa xa sE'msa sa lē'lâlēnôx.
said dead the men past the passed the mouth of the ghosts.

Lā'laē lā q'ug·a'Lē Lā'q'oasqEm, xō's'idas kuä'tsē lā'Xua
Then it is said shouted Lā'q'oasqEm, sprinkle urine on the

bē'bEguanEmēx. Lā'laē hē'guîx·'idē. Hē'x·'ida am lawîs ȣ'uē'-
men Then it is said he did so. At once it is said they

ȣ'ulax·'idē da LE'lXdē. G·ā'xlaē laēL lāx g·ō'koa sēs ōmp. G·ā'x'am
recovered the dead past. He came it is said entered at the house of his father. He came it

laē da lâ'lēnôx hē'k·'ala lā'xa g·ō'kuas ō'mpas. Lā'laē yä'laqâlaē
is said the ghost sounding to the house of his father. Then it is said he sang his secret song

da g·înā'nEmas q'e'nq'Emdamas s lēlâ'lēnôx. Lā'laē dE'nxēg·aē g·ō'ku-
the boy his song of the ghosts. Then it is said they sang with him his

lōtas. Hai'Em lawîs q'ā'lag·iLax q'E'mdEmas lēlâ'lēnôx. Wē'g·a
tribe. That is it is said they learned their song the ghosts. Go on!

hō'LēlaX q'E'mtEma sa g·înā'nEm. Laa'm ɪē'qādEs Nē'nLEqstâls
listen to the song of the boy. Then was his name Nē'nLEqstâls

lā'xîs lElō'Lalalēnayē. K·'ēō's k·'ēs g·āx lā'xa nā'Xua ts'ē'qēnaya
at the Ghost dance. Nothing not came to the all dances

ɪawā k·'ē'k·'as'ō. G·aam q'a'mdEms Nē'nLExstâls xa g·înā'nEm:
and carvings. This is his song Nē'nLExstâls the boy:

1. Yaxamamai, yaxamamai, yaxamamai ya.
Yaxamamai, yaxamamai, yaxamamai ya.

Wē'g·axōs wî'lg·ustâlisa laxēs ēk·'ats'ēlisax nā'la yūL
Go on! you you go up to the upper country day your

lēlowāLanaXdē.
chief of ghosts past.

2. Yaxamamai, yaxamamai, yaxamamai ya.

Yaxamamai, yaxamamai, yaxamamai ya.

Ya qa wōlasqEmlēsLēis yaiqēsawiLōs yūL lēloaLanaXdē.

Ya, to heap up in ground property you you chief of ghosts past.

3. Yaxamamai, yaxamamai, yaxamamai ya.

Yaxamamai, yaxamamai, yaxamamai ya.

Ya qa wālasqoā'palēstsēs t'ē'qoaLālaLōs gulta'yak·'asLōs

Ya to great your fire great you stones in your fire fire good your

lē'loaLanaXdē.

chief of the ghosts past.

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LĒ'LAXA.—LA'LASIQOALA DIALECT.

BEguā'nEm g·ō'kula lāx K·'êk·ē'LEm. Lā'laē Lō'koala wā'x·a.

A man lived in a house at K·'êk·ē'LEm. Then it is said finding a super-natural helper he tried.

Sī'siūL laē wā'x·i Lō'koa'yas. Lā'laē ō'tsaxa, laa'm â'Em LE'lx·'ida.

Sī'siūL it is said try his magic helper. Then it is said he failed, then only he died.

Lā'laē aik·'ēstaxōL. Lā'laē g·ō'kulōdês wu'lisîlax·'it qaē qä'Laxs

Then it is said he went up. Then it is said his tribe made a false grave for him for indeed

nē'k·aax â'laEm LE''la. Â'maalaxōL ŦāL Lō'koala lā'xîs qoē'x·'idaasaxs

they said really he was dead. Only he had found a magical helper at his what he had done

laē ai'k·'ēsta. E'lguxsīk·Ela laē da g·ē'tsE'wasbōLäs. L'ē'sElaxsēg·a- 10

it is said he went up. Blood on its side it is said the coffin pretended. Sun on its

lis laē g·ī'tsEwasbōLäs. Mō'p'EnXuas a'mlaē la'ē ku'n'ōg·āL lā'xa

side it is said coffin pretended. Four days it is said he had gone it began to thunder at the

ai'k·'ē. Hai'maala'xōL Lē'laxaLē da ku'n'ōg·āL. G·ā'xlaē g·ā'xaxālîs

above. He had gone Lē'laxa to be the thundering. He came it is said coming down to the beach

xa qaā'la qa ā'xalîs laēxs g·ā'xaē. Laa'm ts'ē'k'oa lā'xo ku'nXoa.

the morning that early he went coming down. Then a bird there thunder bird.

Laa'm laē q'ō'xwuLts'ōt xēs ku'nxumL Lē'laxa. Laa'm q'â'L'aLELExs

Then it is said he took it off his thunder bird mask Lē'laxa. Then he was recognized

hä'ē Lē'laxē yîsīs g·ō'kulōt. Lā'laē a'mL'idē Lē'laxê sēs Lō'LEkuaē. 15

he Lē'laxa by his tribe. Then it is said he played Lē'laxa his magical treas-ure.

Hē'iEm'El Lō'kuisē da ku'nXumL, wāxsqEmlaē LEwa nā'xnak·aqEmL.

His it is said magical treasure the thunder bird mask both sides face and dawn mask.

Hē'Em lā'wisē da mā'maq'a; hē'imisē da wā'lasē yē'qoaê maqā'yū,

His it is said the thrower; his was the great wood worm implement for throwing,

ts'ē'kuXLä. Hē'iEm lawisē da sē'ilîs. Lā'laē da wôq'ä's, q'a'mXpā-

bird in head. His it is said the snake in belly Then it is said the frog, carrying spear

lEnkula mā'maq'a. Hē'Em lawisē da hā'mats'a. Hē'Em lawisē da

point the thrower. His it is said the cannibal. His it is said the

pa'xalalāL. Hē'Em lawisē da t'ē'nqoa. Hai'Em El Lō'kuē's Lē'laxa. 20

shaman dance. His it is said the t'ē'nqoa. That was it is said his magical treasure Lē'laxa.

1 Hai′Em lā′lasElas Lē′laxē da ku′nXumL. NE′mx·′idaLaam lā′lasEla
His going from one house to the other[1] Lē′laxa the thunderbird mask. One only among all going from one house to the other

lā′xa nō′nLEm ᵀEwa ts'ē′tsaēqa.
to the nō′nLEm and ts'ē′tsaēqa.

[To page 447.]

SONG OF THE RAVEN MASK.

1. Wa! k·ik·a'lēqalag·ilak·asLē ts'aēqēwē'x·dēs BaxbakuālanuXsī′-
Wa! Everybody is frightened by his winter mask BaxbakuālanuXsī′-

waē.
waē.

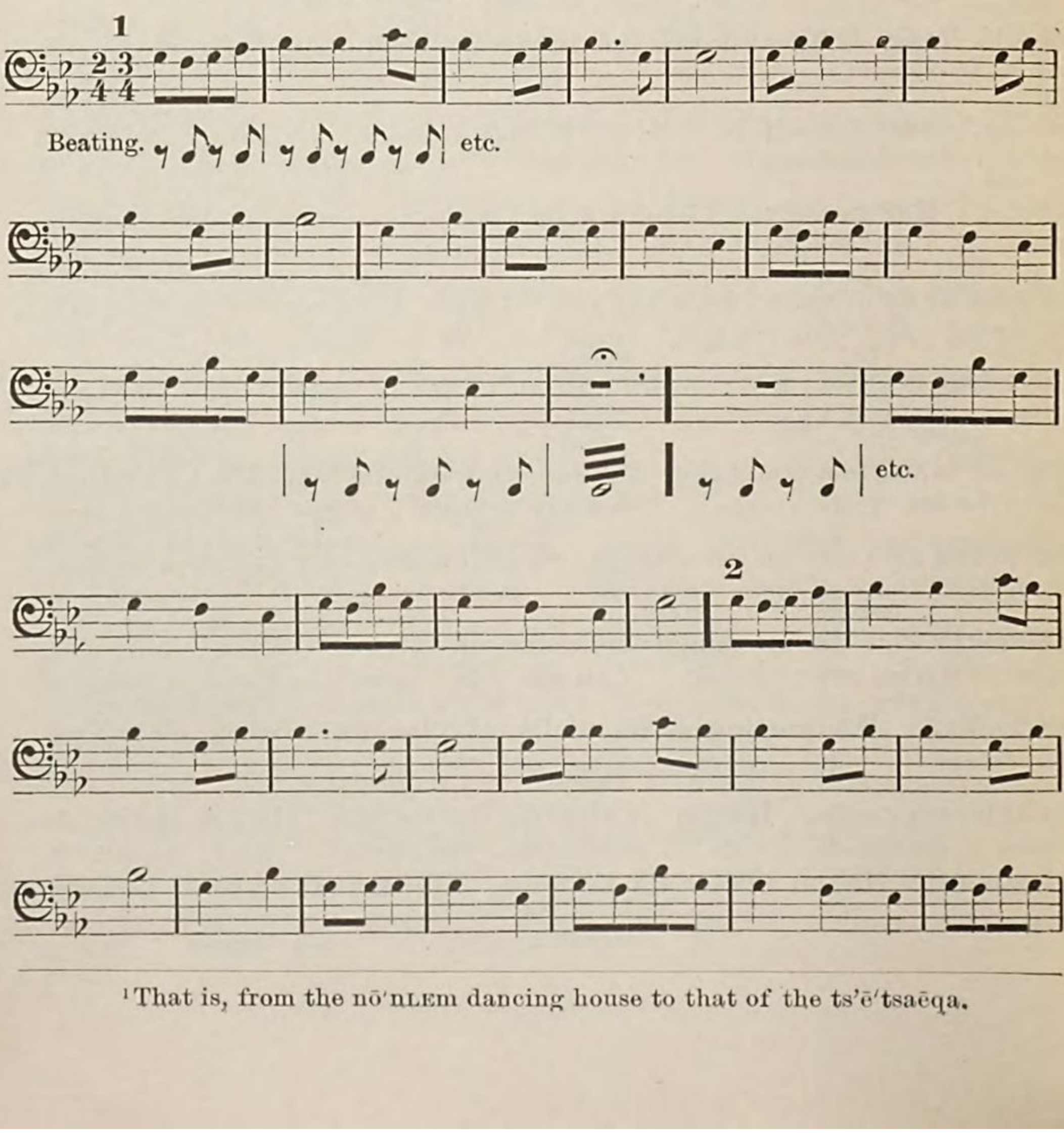
5 2. Wa! k·ik·a'lēqalag·ilak·asLē ha′msiwēx·dēs Qoā′qoaxuālanuXsī′-
Wa! Everybody is frightened by his cannibal mask Qoā′qoaxuālanuXsī′-

waē.
waē.

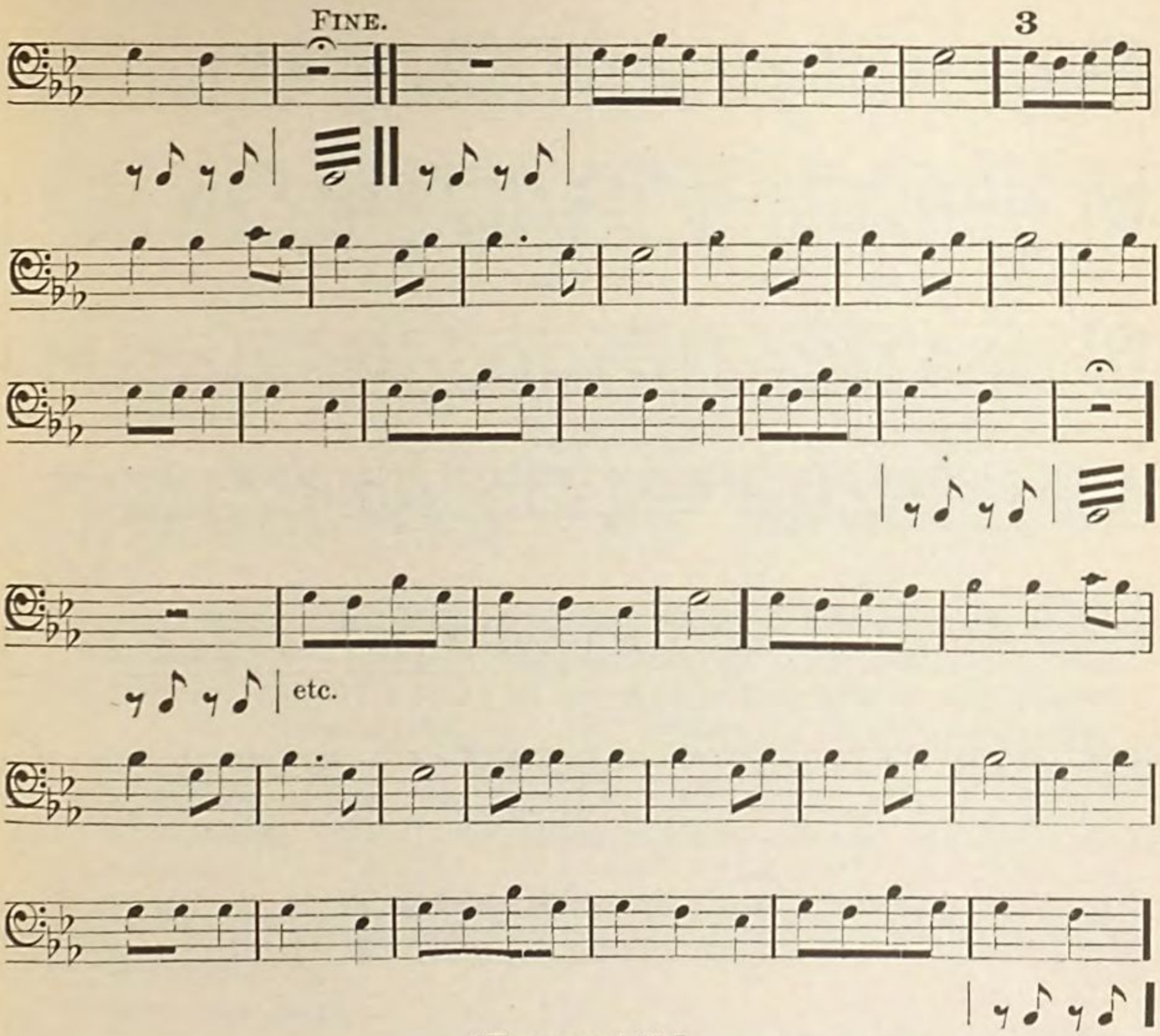
3. WE′lwElq'ēqalag·ilak·asLē qalō′kwēx·dēs.
Causing real palpitations his hooked beak.

4. WE′lwElq'ēqalag·ilak·asLē hau′xhokuēwēx·dēs.
Causing real palpitation his hau′xhok mask.

TUNE, RECORDED BY J. C. FILLMORE.



[1] That is, from the nō′nLEm dancing house to that of the ts'ē′tsaēqa.



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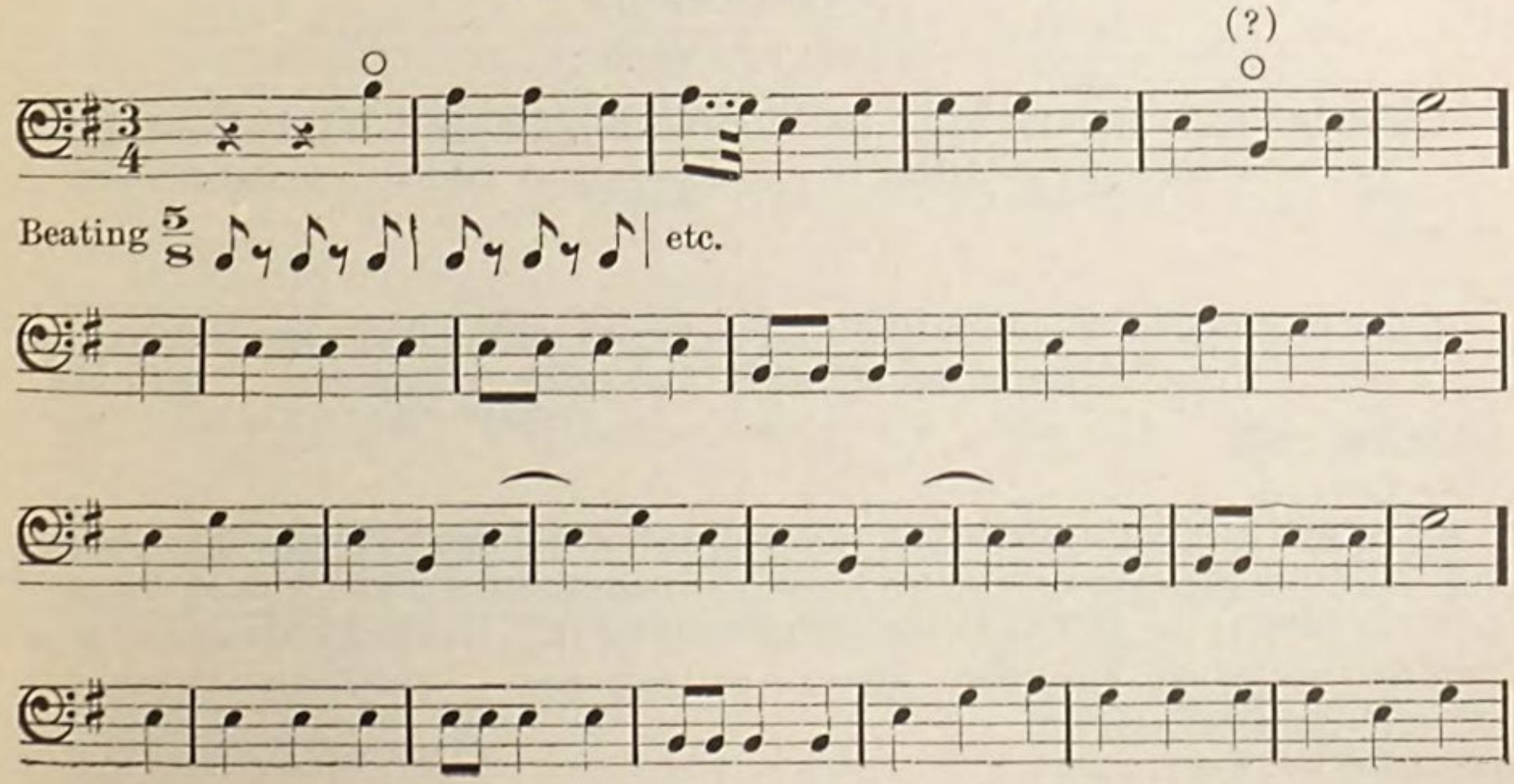
SONG OF THE MASK OF BAXBAKUĀLANUXSĪ'WAĒ.

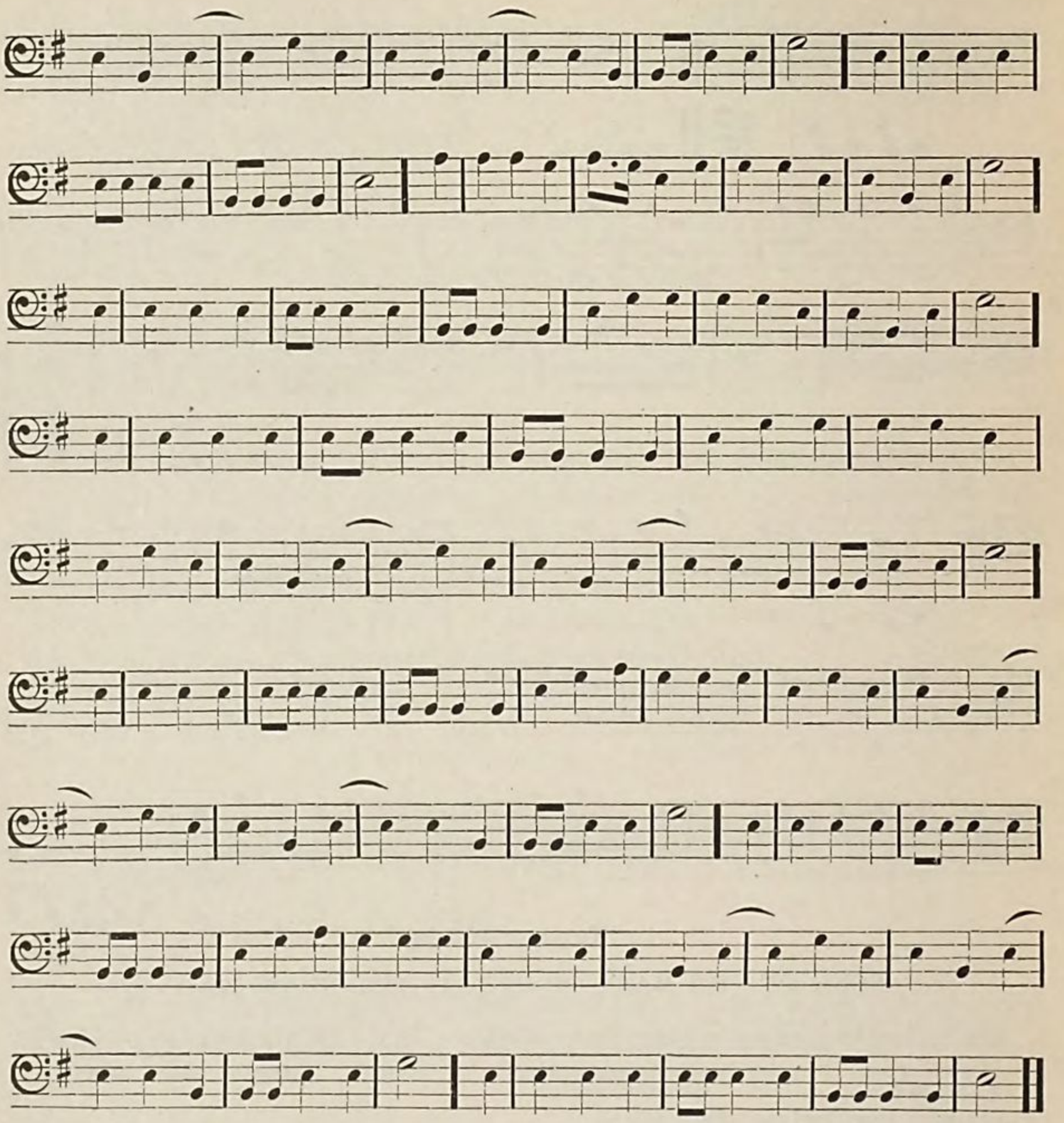
Ha'msiwāla	hamsiwālag·ilîsk·as'ōwai	lax	BaxbakuālanuXsi'waē
Carrying the hā'matsa mask	carrying the hā'matsa mask in the world really	from	BaxbakuālanuXsi'waē

k·as'ōwai lax ōwîstālitsîs nā'la.

real good to all around your world.

TUNE, RECORDED BY J. C. FILLMORE.





Third sometimes doubtful.

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HĀ'MATS'A SONG.

1 1. Ia laXdEn laistai'sEla iū hamtsēstaisEla iūs BaxbakuālanuX-
Ia I have been all around the world iū eating around the world with BaxbakuālānuX-

sī'waē.
sī'waē.

2. Ia nōguaE'm wīsukoalīLēlaXLa wīsuwīstāliLilaXLas Baxbakuā-
Ia I give no time to escape give no time to go around the house with Baxbakuā-

lanuXsī'waē.
lanuXsī'waē.

5 3. Ia laXdEn ha'mxhamxāyag·īLs BaxbakuālanuXsī'waē, lax naqau-
Ia I have been where you cry hāp for me BaxbakuālanuXsī'waē, at the mid-

LēwēIs lō'wa; ia lāXdEn ha'mxhamxāyag·īLs BaxbakuālanuXsī'waē
dle of the world; ia I have been where you cry hāp for me BaxbakuālanuXsī'waē

lax qā'lqatawēîs lō'wa.
at the post of world world.

[To page 458.]

HĀ'MATS'A SONG.

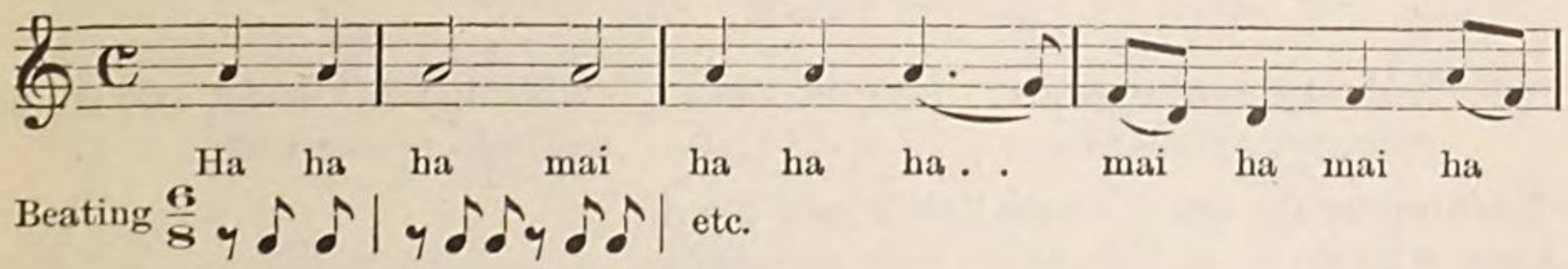
1. Hamhamā'mai. Hē'ilix·sē hā'mats'Elā'qum qai hā'mats'Elaqum
Hamhamā'mai. Take it the hāp sound his hāp sound
qai ʇaō'wisk·asōwas qai guā'paalîsk·astsēs lō'uaiak·asauXs Lō'kua-
his standing really good his northern part real his of the world real the super-
lak·as'owē.
natural real good.

2. Hamhamā'mai. Hē'ilix·sē bā'xbakulaqum qai bā'xbakulaqu'mx·tē
Hamhamā'mai. Take it the BaxbakuālānuX- his BaxbakuālanuXsī'waē
sī'waē sound sound
qai ʇaō'wisk·asōwas qai guā'paalîsk·astsēs lō'uaiak·asauXs Lōkua-
his standing really good his northern part real his of the world real the super-
lak·as'owē.
natural real good.

3. Hamhamā'mai. Hē'ilix·sē hau'xhok'uālaēnē k·as'ōwēs qai hau'x-
Hamhamā'mai. Take it the hau'xhok sound real good his hau'xhok
hok'ualaēnē qai ʇaō'wisk·as'ōwas qai guā'paalîsk·astsēs lō'uaiak·as-
sound his standing really good his northern part real his of the world
auXs Lō'kualak·as'owē.
real the supernatural real good.

4. Hamhamā'mai. Hē'ilix·sē qā'lōqoalaēnēk·as'owēs qai qā'loqoa-
Hamhamā'mai. Take it the raven's cry real good his raven's cry
laēnēk·as'owēs qai ʇā'owîsk·as'ōwas qai guā'paalîsk·astsēs lō'uaiak·as-
real good his standing really good his northern part real his of the world
auXs Lō'kualak·as'owē.
real the supernatural real good.

TUNE, RECORDED BY H. E. KREHBIEL.



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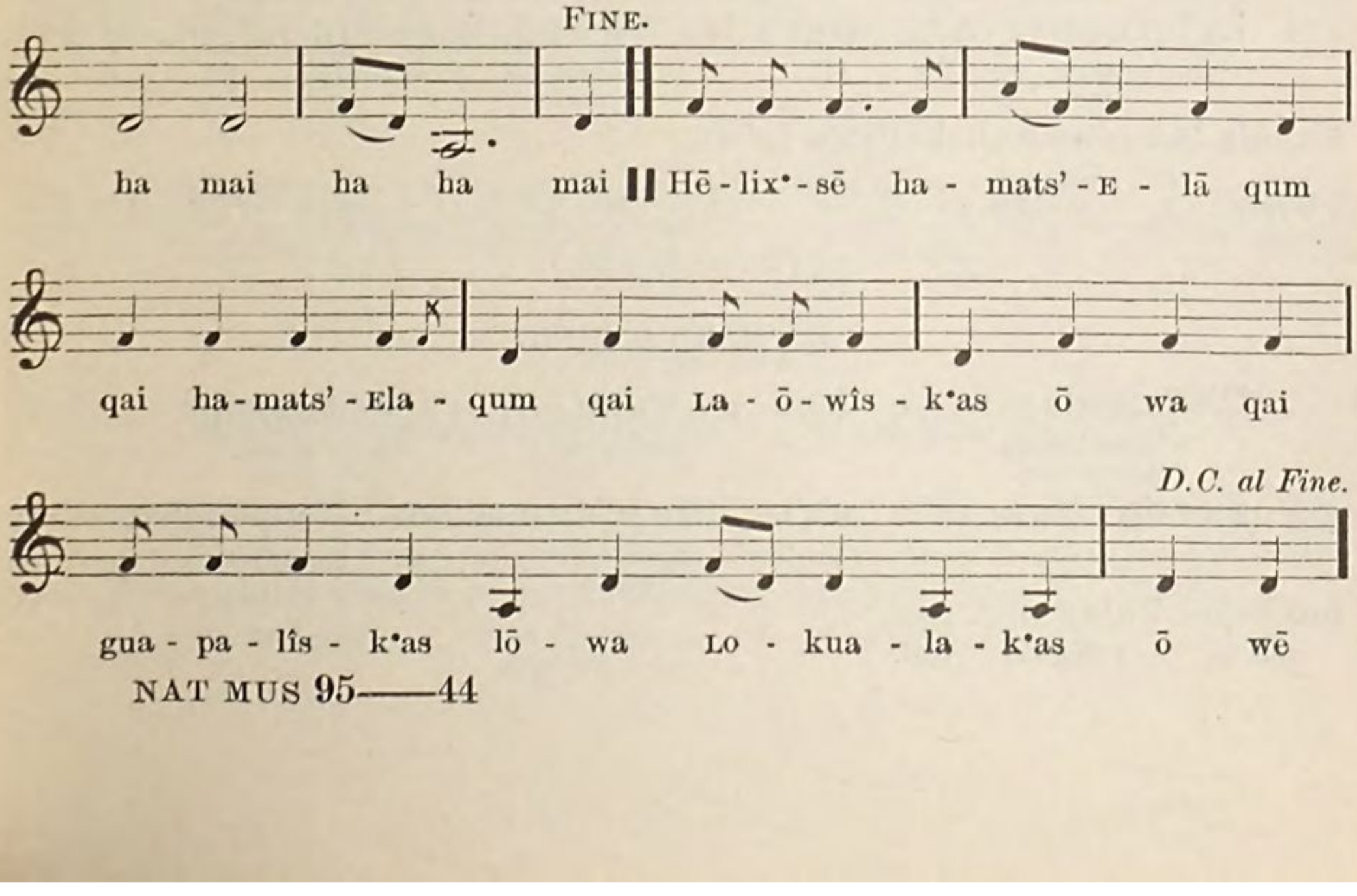


[To page 459.]

HĀ'MATS'A SONG.

1. Ha'msamēLayaXdōsxa nō'gua ha la nō'gua; ha'msamēLayaXdōsxa
Food is always being put into my mouth I ha! do I; food is always being put into my mouth

nō'gua LŌ'kualag·īLa.
I therefore I am supernatural.

2. Q'u'la mEnsāyaXdōsxa nō'gua, ha la nō'gua; q'u'la mEnsāyaX-
Life I am always swallowing I ha! do I; life I am always swallowing

dōsxa nō'gua q'oē'q'ulaXdē ha'msayaXdē.
I lives past food past.

3. Yā'qamēLayaXdōsxa nō'gua; ha la nō'gua yā'qamēLayaXdōsxa
Property is always being put into my mouth I ha! do I; property is always being put into my mouth

nō'gua yäiqāwē'Xdē ha'msayaXdē.
I property past food past.

[To page 459.]

HĀ'MATS'A SONG.

1. Hā'masa'yalag·ēLdE nō'gua lax ō'wistāla lāk·asdE nō'gua.
Going to get food for me I at around the world went really I.

Hā'masa'yala lax ō'wastalîsk·ā'tsēs lōwa.
Going to get food at around the world really your world.

2. Bā'bakoayalag·ēLdE nō'gua lax ō'wistāla lak·asdE nō'gua. Bā'ba-
Going to get men for me I at around the world went really I. Going to

koayala lax ō'wastalîsk·ā'tsēs lōwa.
get men at around the world really your world.

3. Xā'xaqoayālag·ēLdE nō'gua lax ō'wistāla lak·asdE nō'gua.
Going to get skulls for me I at around the world went really I.

Xā'xoqoayāla lax ō'wastalîsk·ā'tsēs lōwa.
Going to get skulls at around the world really your world.

4. Lā'lōLayalag·ēLdE nō'gua lax ō'wistala lak·asdE nō'gua. Lā'lō-
Going to get a corpse for me I at around the world went really I. Going to

Layala lax ō'wastalîsk·ā'tsēs lō'wa.
get a corpse at around the world really your world.

[To page 459.]

HĀ'MATS'A SONG.

1. Q'ā'laSoalag·ilîs a hais g·ā'nEmLŌL; q'ā'laSoalag·ilîs a hais
Will be known everywhere later on you; will be known everywhere

g·ā'nEmLŌL ō'wanxēlîs nā'la. Hē'iL'ālîstsēk·as. Nā'qēstalîstsēk·as
later on you edge of world world. Right one in great world real. Safely returned great real

ōup'ēqas Yālag·ilîsk·asa.
chief of Yālag·ilis real.

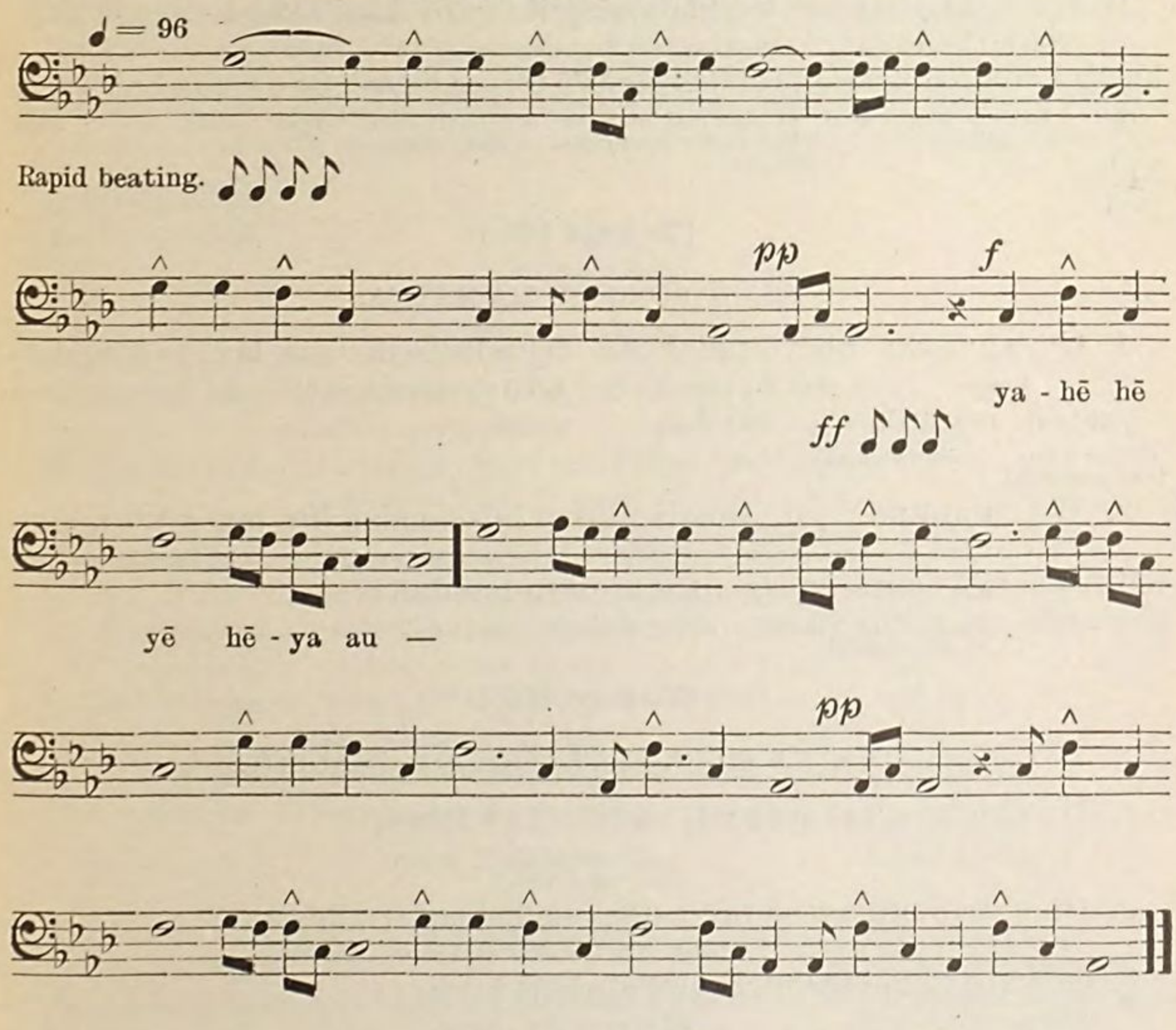
2. Q'ā'laʂoalag·ilîs a hais g·ā'nEmLōL; q'ā'laʂoalag·ilîs a hais 1
Will be known everywhere later on you; will be known everywhere
g·ā'nEmLōL ō'wanxēlîs nā'la. Lā'ix·dēqōus g·î'lq'Esamatsōkwas
later on you edge of world world. They went and made you made you eat first
bā'kwastēa haik·ā'sas BaxbakuālanuXsī'waē.
dried human flesh real BaxbakuālanuXsī'waē.

3. Haip'ēqalētsEmXtEnai lāx ha'msp'ēqas nā'qauLēwalīts nā'la.
Being led right to the pole to his cannibal pole in the rear of the house of the world world.

4. Haip'ēqalētsEmXtEnai lāx ha'msp'ēqas q'a'nq'aqā'walēits nā'la. 5
Being led right to the pole to his cannibal pole the milky way of the world world.

5. Haip'ēqalētsEmXtEnai lāx ha'msp'ēqas hē'iLk·'ōtēwalēits nā'la.
Being led right to the pole to his cannibal pole the right-hand side of the world world.

TUNE, RECORDED BY F. BOAS.



[To page 459.]

SECRET SONG OF HĀ'MATS'A.—AWIK·'ENÔX DIALECT.

Ya, wunē'nasū'Xsīya qa ēs ha'msayak·asdē. Wē'q'as nō'gua
Ya. go you for his food real past. Nothing I
qoē'q'ulaqEmlēLk·asdē ha'msayasōLas BaxbakuālanuXsīwaēk·asdē.
living face real past food that will be obtained from BaxbakuālanuXsī'waē real past.

[To page 459.]

HĀ'MATS'A SONG.

1 HaiLaiqoe'x·sē a haiLaiqoē'x·sē awā'la Bāxbakuālanuxsī'waē
That is the way! That is the way! real BaxbakuālanuXsī'waē
Aswä'La, aswä'Lai? awä'la Bāxbakuālanuxsī'waē.
Is that you, is that you? real BaxbakuālanuXsī'waē.

[To page 460.]

FEAST SONG OF HĀ'MATS'A.

1. G·ā'xg·astEn qoēyō'LElak·ās'a mā'mEnLēyak·ās'a·ts'ā'ēqēlask·as'ōs
I came near the place really to fill my stomach really your real house of the winter ceremonial
mā'mEnLēyask·as'ō.
filling stomach real.
5 2. K·ê'LElag·ilak·as k·ē'k·aliqalag·ilak·asē haai'LElask·as L'ē's'ala-
Making scared really making reluctant to go really to go right in really the heat
k·as'a k·'i'lōpalak·as'a ts'āēqēlask·as'ō tā'yaLtsēask·as'ō waha hai, waiya
real the whirling flames real of your real house of the winter ceremonial where all warm their hands real waha hai, waya
wai.
wai.

[To page 460.]

FEAST SONG OF HĀ'MATS'A.

1. G·ā'xg·astEn qoēyō'LElak·asa mā'mEnLēyak·asa lax ts'ā'eqatsē-
I came near the place really to fill my stomach really at your real house
yasqōs mā'mEnLēya hai dai.
of the winter ceremonial filling stomach hai dai.
10 2. Wāx'amLEnōX yîlXsanâlag·ilīLai hōxsanâlag·ilīL lax mE'nLmEn-
Never mind if we are hurt (by the fire) if we vomit at the kinds of food
LāliLtsēs ts'ā'ēqatsēāqōsa mā'mEnLēya hai dai.
in your house house of the winter ceremonial filling stomach hai dai.

[To page 460.]

HĀ'MATS'A SONG.—LA'LASIQOALA DIALECT.

1. Hā'okhok'oā'laē stamx·ti owēstā'Xtîs lō'wa.
Hō'xhok's voice is all around the world world.
2. Hā'uxaunākulasLas ts'ē'tsaēqanxēlîsk·astsēs lō'wa.
Assemble at your places edge of ts'ētsaē'qa real your world.
3. Qoā'qoaxō'laē stamx·ti owē'staXtîs lōwa.
The raven's voice is all around the world world.
15 4. K·î'mqōnā'kulasLas bē'bēkunxēlîs lō'wa.
Assemble at your places lower edge of world world.
5. Hā'matsElaqolai stamx·ti owēstā'Xtîs lō'wa.
Hā'mats'a's voice is all around the world world.

[To page 460.]

HĀ'MATS'A SONG.—LA'LASIQOALA DIALECT.

1. LaistaisElag·ilîsk·asō haō Lō'koala hamai am. Ha'msaiālag·ilîs-
He goes around the world truly haō the super-natural one hamai am. He looks for food around the world

k·asō haō Lō'koala, hai, lax waxsE'nxēlîsk·atsîs lō'wa.
truly haō the super-natural one hai, at both sides of the world world.

2. Q'aq'aēiq'atsā'lag·ilîsk·asō haō Lō'koala hamai am. Nā'naXq'oa-
He always wants to eat much truly haō the super-natural one hamai am. Trying to eat alone

tsā'lag·ilîsk·asō haō Lō'koala, hai, lāx wīEmq'asāyasōXdēs hēs qoēsō-
truly haō the super-natural one hai, at the food which he did not obtain his at the far

tEnxēlîts lo'wa.
edge of the world world.

3. WaxsEmq'asElag·ilîsk·asō haō Lō'koala hamai am, hai, lax nā'naX-
He eats from both sides truly haō the super-natural one hamai am, hai, at trying to

q'atsayasōs qoē'sōtEnxēlîs lō'wa, lax wī'Emq'asāsōXdēs hēiLk·'ōtE'nxē-
eat alone at the far edge of the world world, at the food which he did not obtain at the right-hand side

lîsk·atsēs lō'wa.
of the world world.

[To page 460.]

K·Î'NQALALALA SONG.

1. La nō'gua ōwāmaxalisayuLē tā'nîsk·as'ō awamai.
I press down your madness cannibal real good.

2. La nō'gua yōLaxalisayōLai tā'nîsk·as'o awamai.
I press down your whistles cannibal real good.

3. La no'gua suwamaxalisayōLai tā'nîsk·as'ō awamai.
I press down your hunger cannibal real good.

4. Hā'laiqais hā'masa'yalaqEmLōsai tā'nîsk·as'ō awamai.
Indeed you your face looking for food cannibal real good.

5. Hā'laiqais xāxōqoayā'laqEmLōsai tā'nîsk·as'ō awamai.
Indeed you your face looking for skulls cannibal real good.

6. Hā'laiqais yā'qamEnsāyaqEmLōsai tā'nîsk·as'ō awamai.
Indeed you your face devouring property cannibal real good.

[To page 461.]

K·Î'NQALALALA SONG.

1. Qoā'LElaamXdē qā'k·uLts'â'lisē qamqa'mXulayōs ts'ā'ēqōnakula
Begin crowded in the house feathers all over you moving to one place

sa yîs'owai'stas na'lē yēyē.
of all around the world world yēyē.

2. Qoā'LElaamXdē wē'iLaxalāsē māmEnlā'yuLōs mE'nmEnLElāg·īta
Begin weak from her tempting food for one who is satiated oversatiated through you

yîs'owai'stas nā'lē yēyē.
all around the world world yēyē.

3. Qoā′LElaamXdē aik·'exsâlēsē yūkuisāwayōs hō′xonakulaēda
Begin through the roof burnt stones you all running into the house

yîs′ōwai′stas nā′lē yēyē.
all around the world world yēyē.

[To page 461.]

K·Î′NQALALALA SONG.

1. Ha hā′pxāyag·īLk·asdEn hā′matElaqoag·īLdēîs BaxbakuālanuX·
He cries hāp for me he cries the hā′matsa sound for me BaxbakuālanuX-

sī′waēk·asdē qa haux Lō′koalak·ās.
sī′waē real past for this super- natural one real.

2. Lā′mXdēwē′sEn mE′ns'alisāyasō max'alisā′yasō s q'ā′q'ēlaqulaXdē
I have been shown thrown into me of many sounds of whistles

nau′alak'oalag·ilitsEms ōwulqâlag·ilis ҂ō BaxbakuālanuXsī′waēk·asdē
sound of magic of the companion and BaxbakuālanuXsī′waē real past

qa hau′x Lō′koalak·as.
for this supernatural one real.

3. ÂmXdowē′sEn lā′laālag·ilîsa haiq'EnXolag·ilîs lāx ōgoaq'ā′lag·ilîsa
Only I going reaching in front of him at different sound.

nE′msqEmg·ī′lag·ilîsa nō′nLEmg·ilîsa naualak'oalag·ilitsEms ōwulqà′-
only sound making foolish sound of magic of the com-

lag·ilîs ҂ō BaxbakuālanuXsī′waēk·asdē qa haux Lō′koalak·as.
panion and BaxbakuālanuXsī′waē real past for this supernatural one real

[To page 461.]

K·Î′NQALALALA SONG.

1. Ts'ā′tsaēqalaqolēistamLēis naualaX'unēk·asLōs, ts'ētsaēqâlag·i-
Winter dance sound everywhere magic your body real your body is all

t'āya hayēma ma mai.
winter dance hayēma ma mai.

2. Hamats'Elaqolēstam Lēis nauala X'unēk·asLōs, hā′matsElaqūt'aya
Hā′mats'a sound everywhere magic your body real, your body cries hap

hayēma ma mai.
hayēma ma mai.

3. Tā′yugulisīlak·asa laiLaōs aix·ā′laLElālisk·as lāx mE′lsElag·ili-
You go near really you go right up to him really to turning neck

tsEmk·asLā Lā′lahawulaqulayūLōs qoē′qoaxulag·ītaya hahē.
(raven) real raven's war cry you raven's cry on body hahē.

4. Tā′yugoalisElak·asa laiLaōs aix·ā′laLElālisk·asLa qa′mkulag·ili-
You go near really you go right up to him really shutting beak

tsEmk·as hauxhokuā′lag·itā′ya hahē.
real hauxhok[u] sound on body hahē.

5. Tā′yugoalisElak·asa laiLaōs aix·ālaLElālisk·asLa waxsEnqolag·īLa
You go near really you go right up to him really carrying (a skull) in each hand

q'ā′q'aLElag·īLalōL nakulag·īLa haē.
carrying (a corpse) on the arms for you moved for you hahē.

[To page 461.]

K·Î'NQALALALALA SONG.

1. Ts'ā'tsēqalaqoalag·ĭLdōX Lō'koalak·as'ōwama.

Winter ceremonial song for me the super- natural one real good.

2. Hā'mats'Elaqulag·ĭLdōX Lō'koalak·as'ō'wama.

Hā'mats'a song for me the super- natural one real good.

3. Ba'bakulaqoalag·ĭLdōX Lō'koalak·as'ōwama.

BaxbakuālanuXsī'waē's the song for me super- natural one real good.

4. K·'ēōkulisilak·asLēs nau'alakuasōs Lō'koalask·asa. Hē'Em laiL

(I) destroyed really your magic the super- natural one real. Therefore

wu'Ltsē wā'namēistāla wax wu'La dō'x'oaLElak·āsax nau'alakuasōs 5

long ago they hide everywhere try a long time to see really your magic

Lōkoalak·asa ha hamamai.

the super- natural one real ha hamamai.

[To page 461.]

K·Î'NQALALALA SONG.

1. Hē'ilik·ilaLElaLis dō'qula qoā'nask·asdēaLas Ba'xbakuālanuX-

Taming see (me) the wildness real past of BaxbakuālanuX-

sīwaēdē dōqula!

sī'waē past see (me)!

2. Hā'yasElaLElaLis dōqula qoā'nask·asdēaLas yēx·siwalag·ilîsdē

Cutting the veins see (me) the real wildness past of monster at north end of world past

dō'qula! 10

see (me)!

[To page 463.]

Q'ŌMINŌQA SONG.

1. LaistaisElayūXdōX Q'aōminōaqaXdē lax ōwaistas nā'la.

Going around the world (past) Q'ōminōqa past to all around world.

2. TowistaisElayūXdoXs Q'aōminōaqaXdē lax ōwaistas nā'la.

Walking around the world (past) Q'ōminōqa past to all around world.

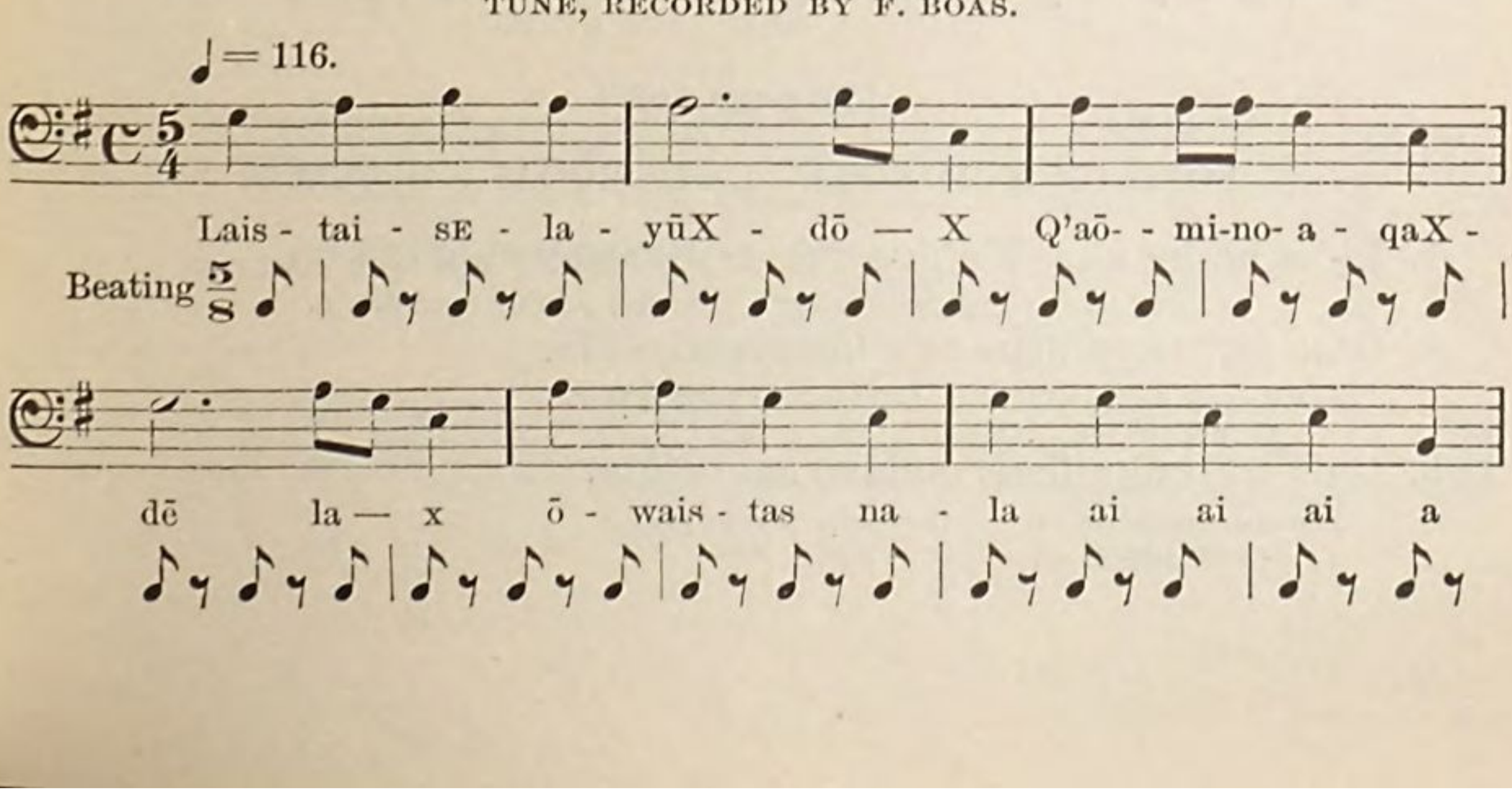
3. Ia'yag·ila qoai'LdoXs yā'k·'ōL'anaik·ā'sdēs Q'ō'minoaqaXde.

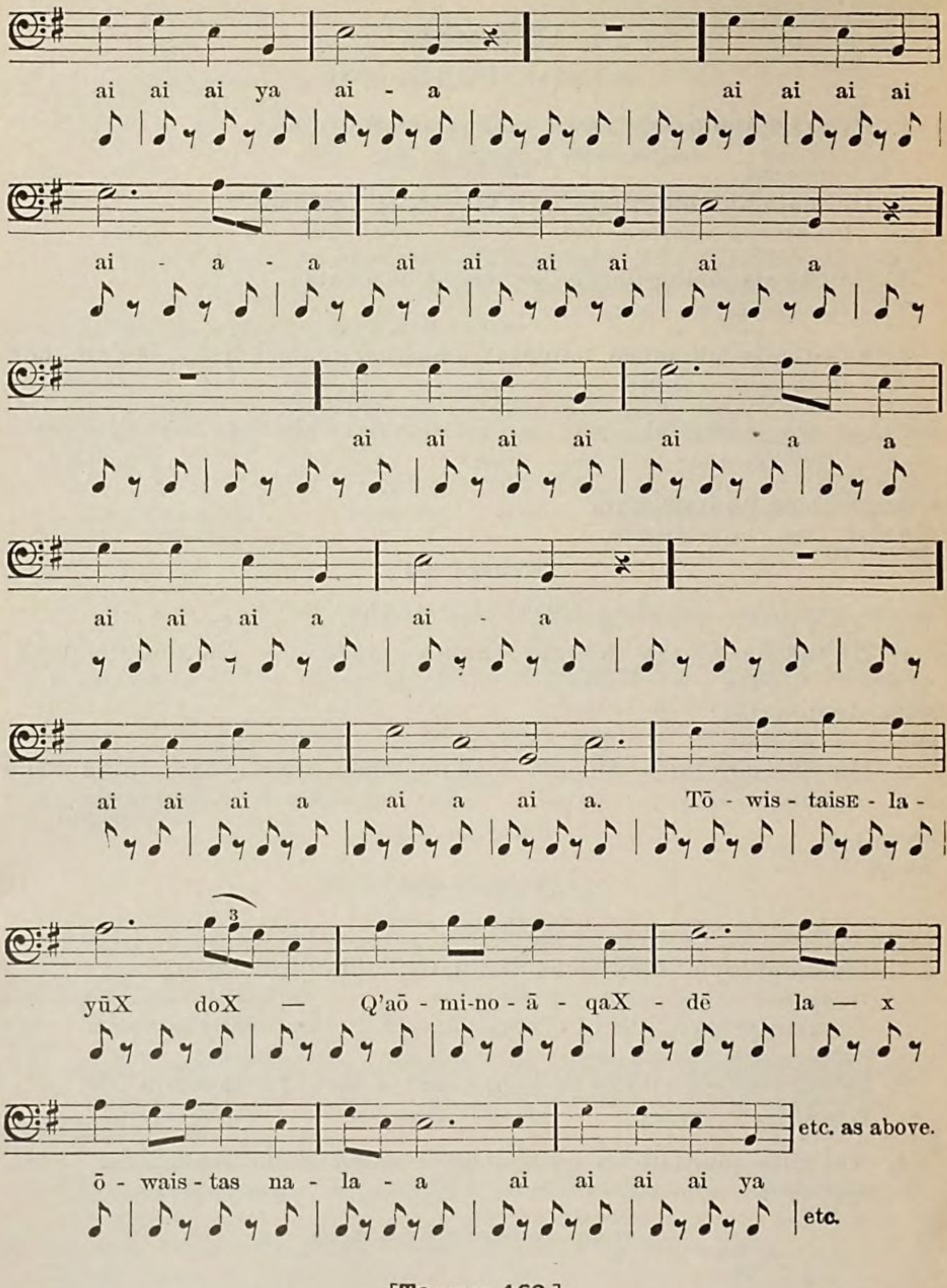
Prophesying evil from bad side (left hand) of Q'ōminōqa past.

4. Aai'g·ila qoai'LdōXs aix·k·'ōLanēk·asdēs Q'ō'minōaqaXdē.

Prophesying good from good side (right hand) of Q'ō'minōqa past.

TUNE, RECORDED BY F. BOAS.





[To page 463.]

SONG OF Q'ŌMINŌQA.—LA'LASIQOALA DIALECT.

1. Ia ha ha ha na. Hē'ik·asmîs ts'ātsaēqēnoaig·iLā'na.
   Ia ha ha ha na. Truly, therefore they are joining your dance.
2. Qaîs yE''nEguilisus ts'E'loaqēnoaiyēida.
   Because you carry a rattle in your hands they join in your praise.
3. Qaîs wī'lEnguilisus amiaxē'noaiyēida.
   Because you carry all in your hands they join in your praise.

[To page 464.]

SONG OF HA'MSHAMTSES.

1. Hamasa'yā'lag·ilā haisai yē hamāmamai.
   Trying to look for food all around the world yē hamāmamai.
2. Bā'bakuayā'lag·ila haisai yē hamāmamai.
   Looking for men all around the world yē hamāmamai.
3. Q'ula' mEnsāyag·ila haisai yē hamāmamai.
   Life swallowing all around the world yē hamāmamai.
4. Xa'xauquayā'lag·ila haisai yē hamāmamai.
   Looking for heads all around the world yē hamāmamai.

TUNE, RECORDED BY F. BOAS.

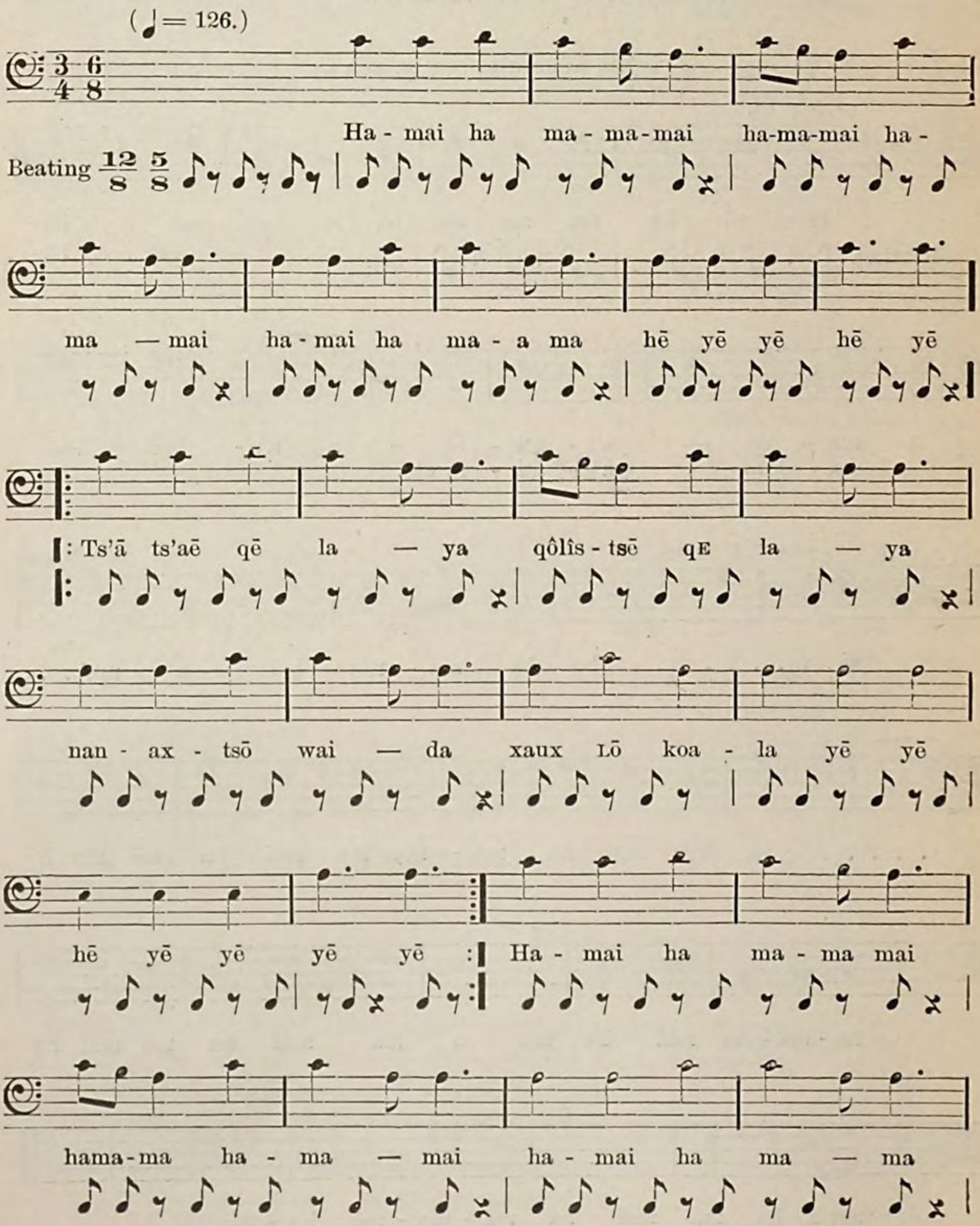
[To page 464.]

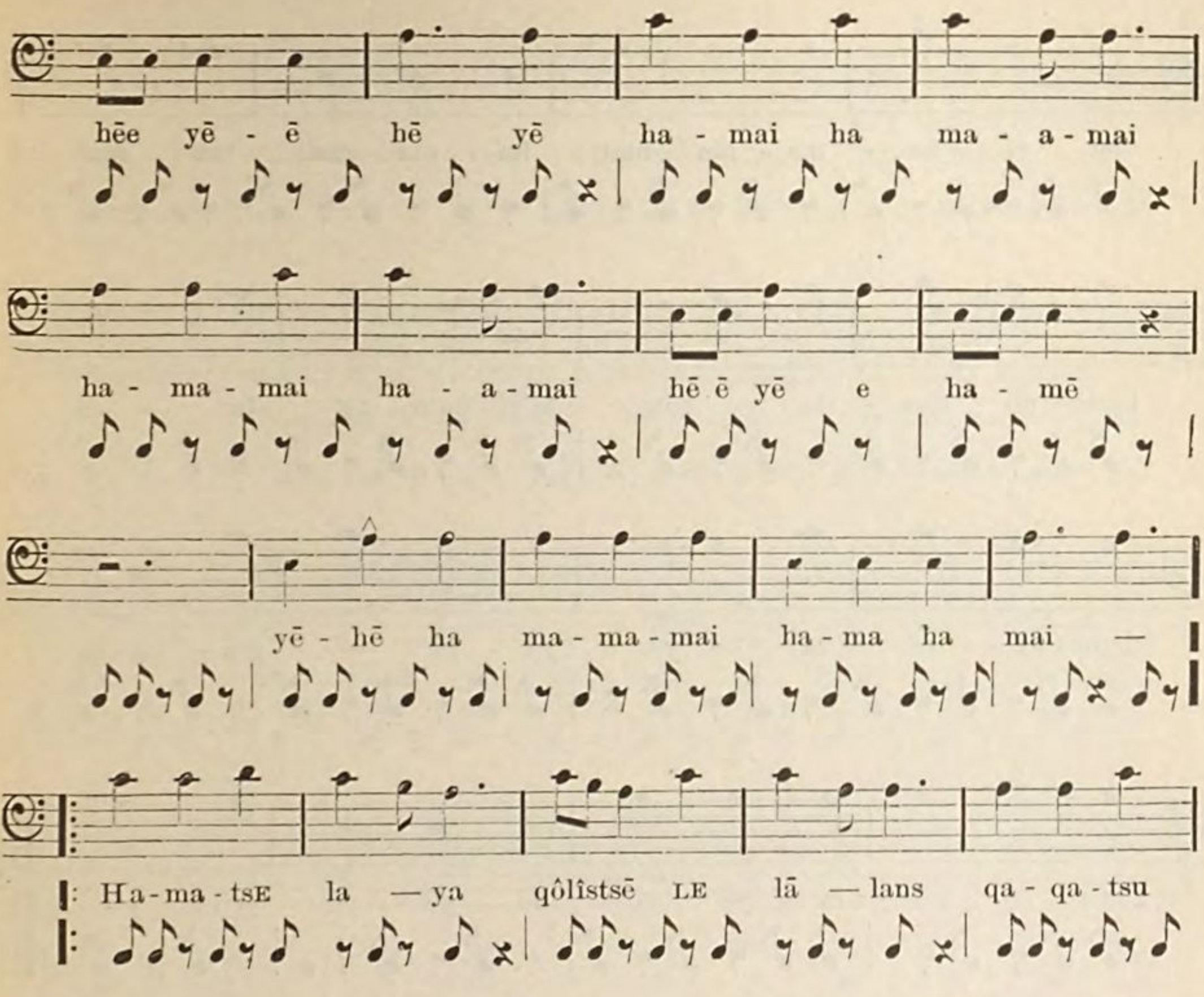
SONG OF HA'MSHAMTSES.

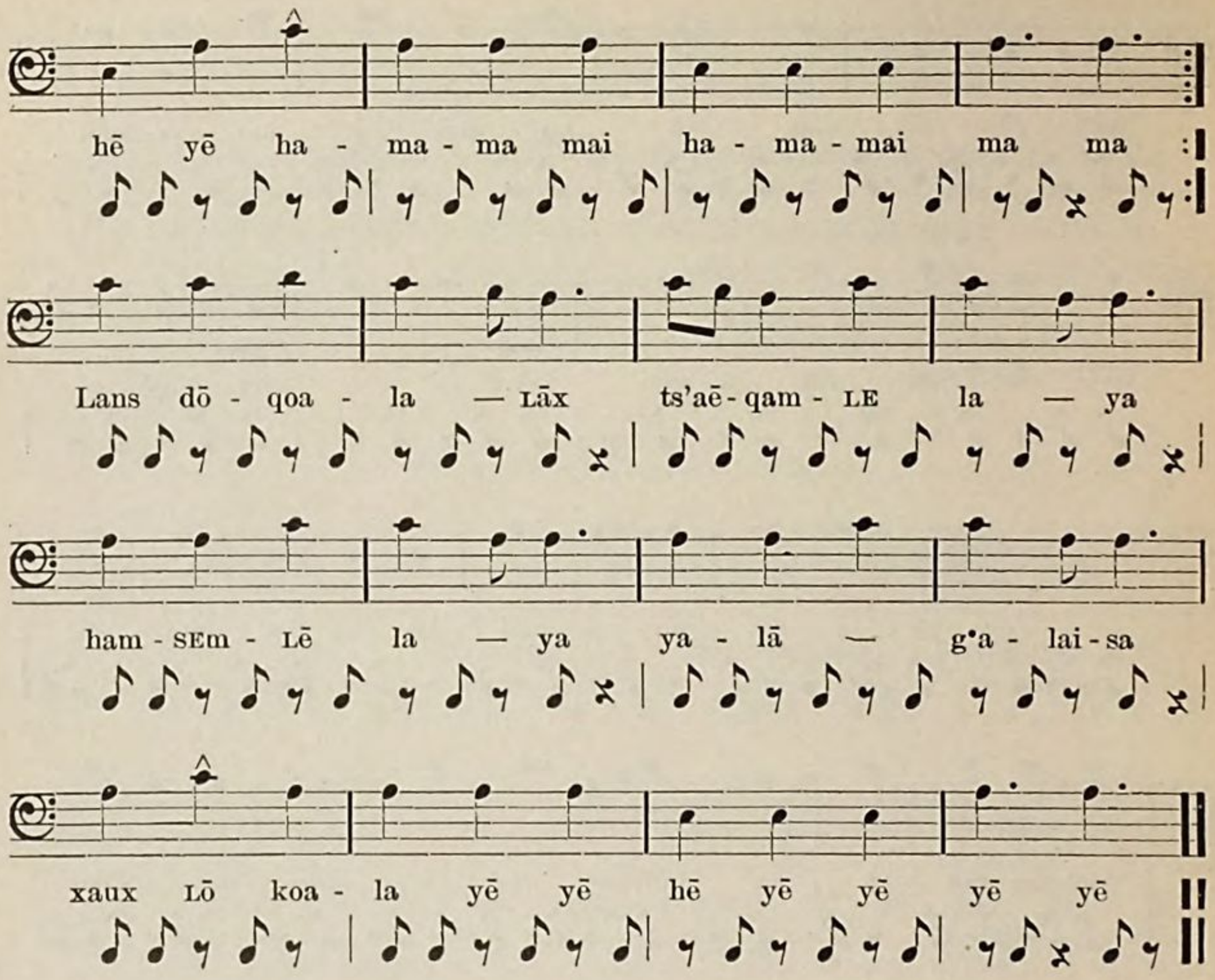
1. Ts'ā'ts'aēqELaqôlîstsē LELā'lans nā'naxtsowai da xaux Lō'koala.
   Singing great ts'ā'eqa song will our imitated one the that supernatural one.
2. Hā'matsELaqôlîstsē LELā'lans q'ā'q'atsEwaidēa xaux Lō'koala.
   Great hā'mats'a cry will be our imitated one that supernatural one.
3. Lans dō'qulaLax ts'ā'eqamLELāya ha'msEmLELāya iā'lag·ilîs xaux
   We shall see it his mask the hā'mats'a mask what makes him travel about that

Lō'koalaya.
supernatural one.

TUNE, RECORDED BY F. BOAS.




hēe yē - ē hē yē ha - mai ha ma - a - mai
ha - ma - mai ha - a - mai hē ē yē e ha - mē
yē - hē ha ma - ma - mai ha - ma ha mai —
Ha - ma - tsE la — ya qôlîstsē LE lā — lans qa - qa - tsu
ai - de - a xaux LŌ koa LA yē yē hē yē yē yē - yē
Ha - mai ha ma - mamai hamamai ha ma — mai ha - mai ha -
ma a ma hē ēyē ē yē yē ha - mai ha ma - a - mai
ha - mai ha - ma - a mai hē yē ē ha mē

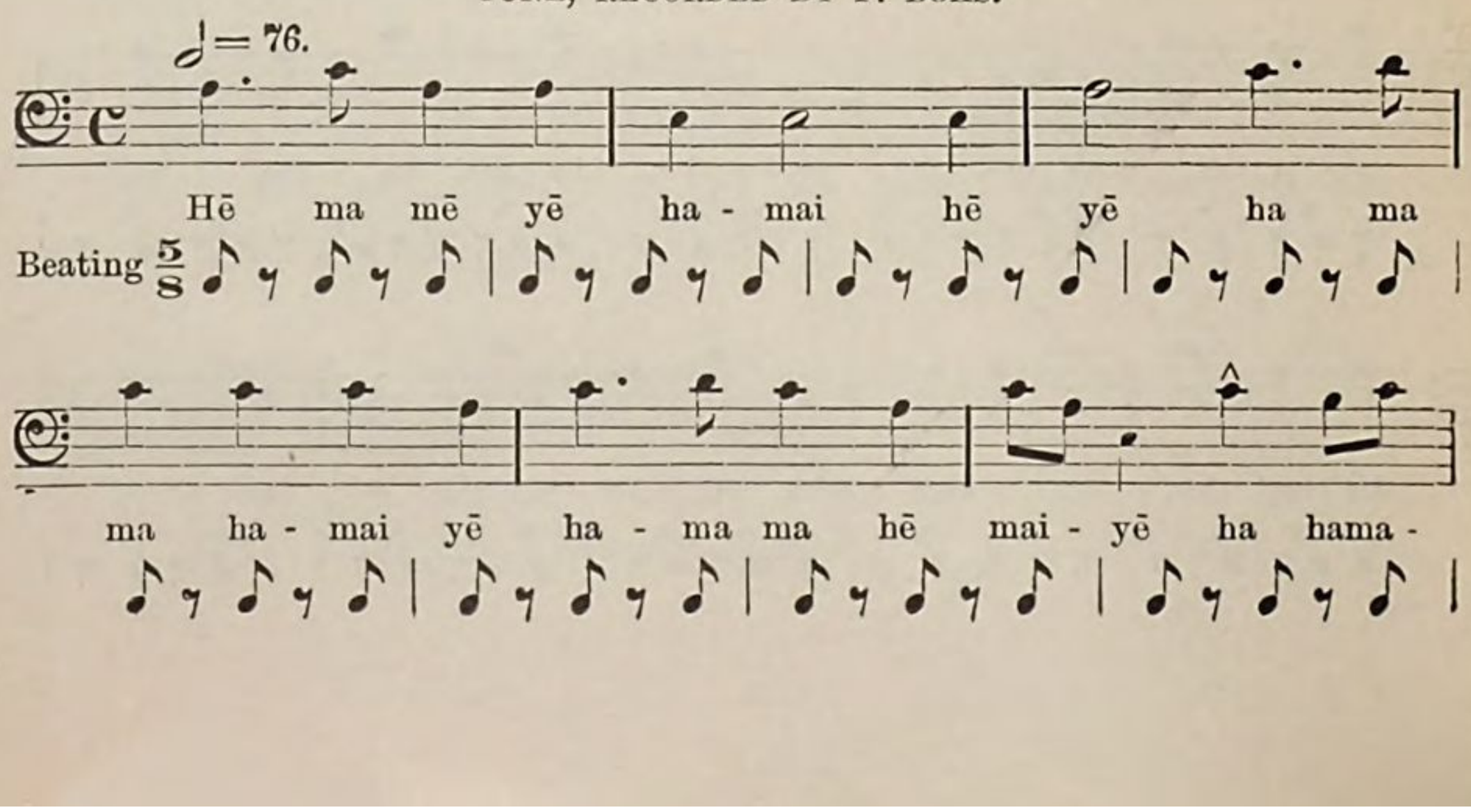


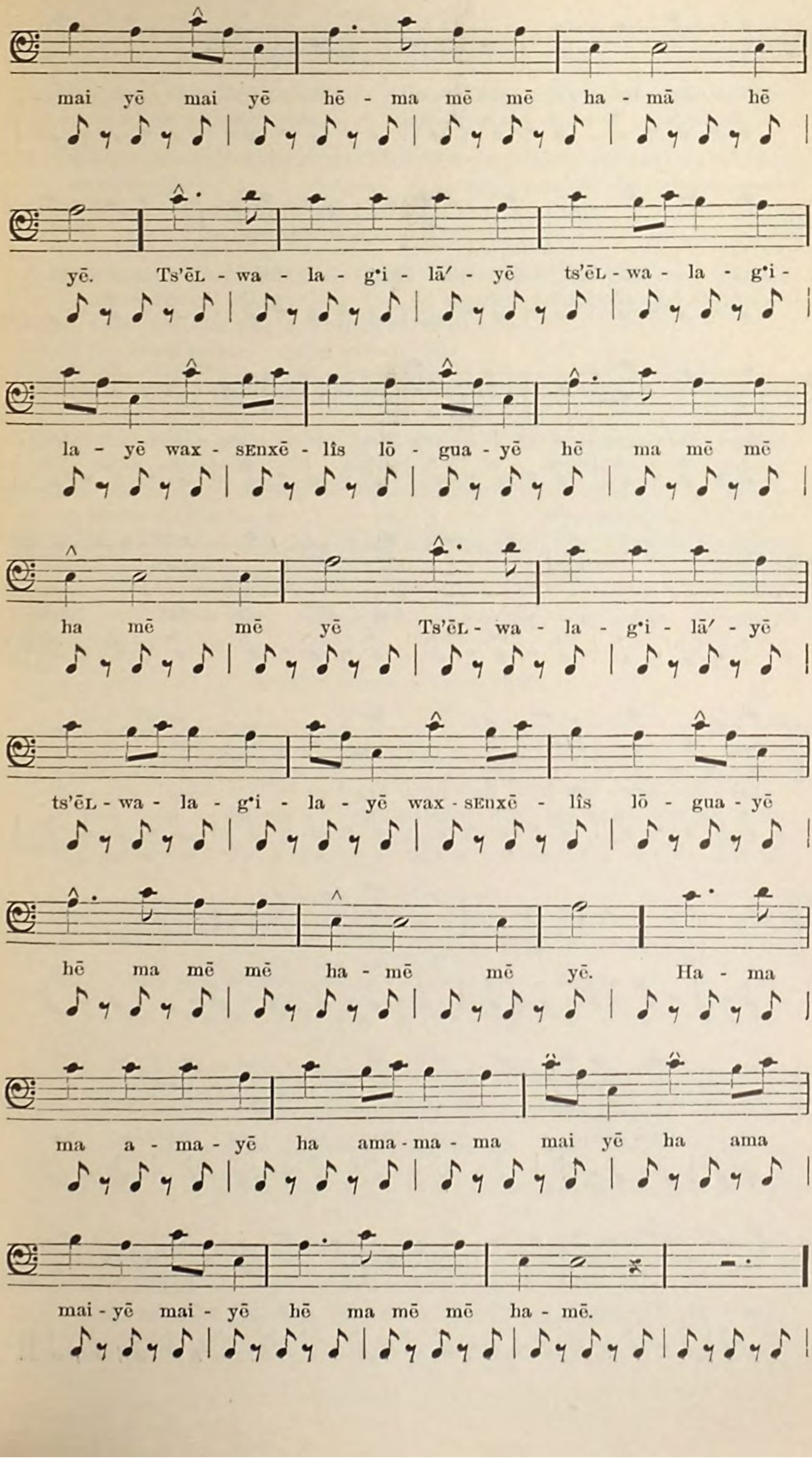
[To page 465.]

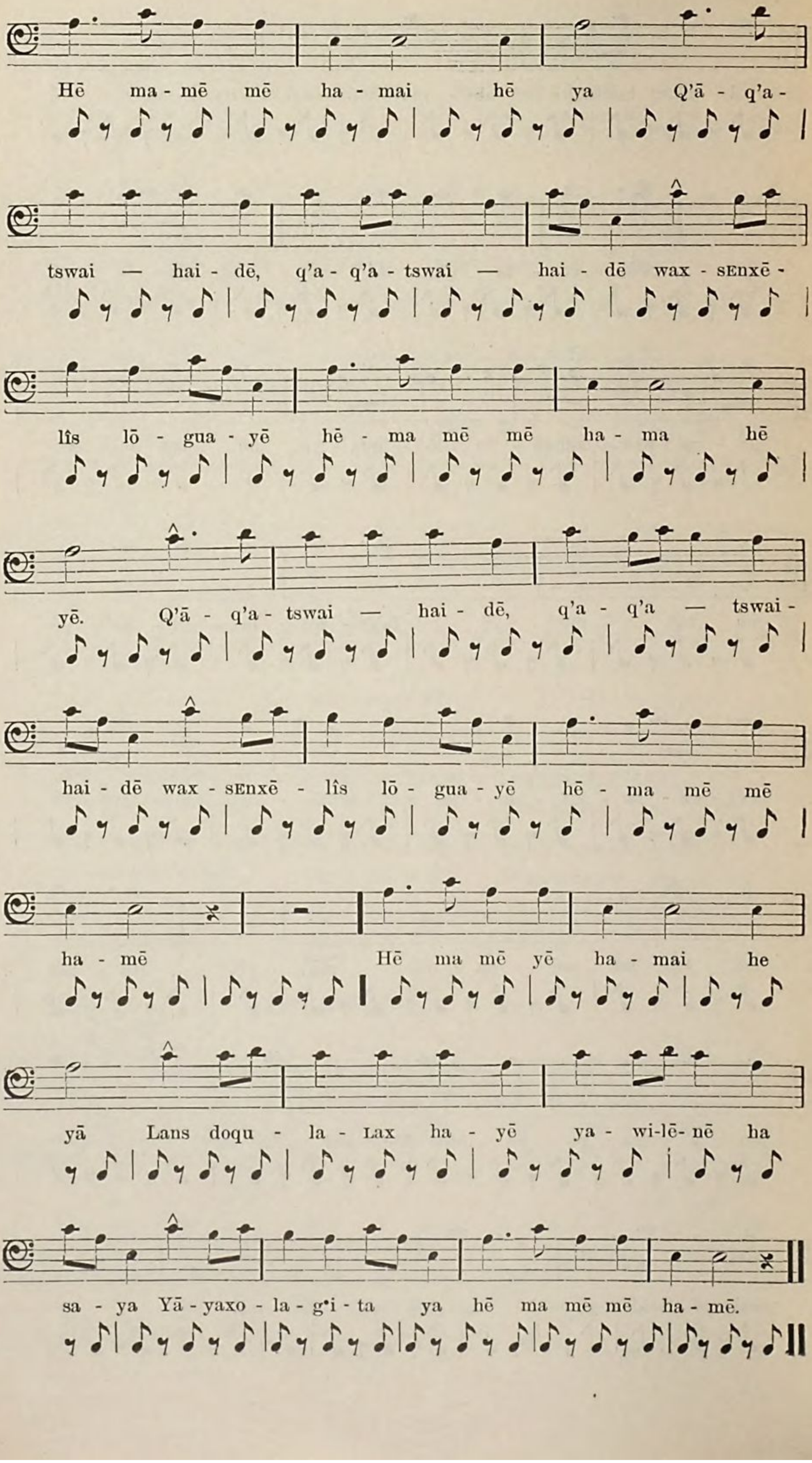
SONG OF HA'MSHAMTSES.

1. Ts'ēLwalag·ilîsayē, ts'ēLwalag·ilîsayē wāxsEnxēlîs lō'wa.
   Famous everywhere, famous everywhere at both ends of the world.
2. Q'ā'q'atsuwaihaidē, q'ā'q'atsuwaihaidē waxsEnxēlîs lō'wa.
   Tried to be imitated tried to be imitated at both ends of the world.
3. Lans dō'qulaLax gi'wi'lēnē hāsō yā'yaxolag·itaya.
   We shall see him (dancing) in house him dancing.

TUNE, RECORDED BY F. BOAS.




mai yē mai yē hē - ma mē mē ha - mā hē
yē. Ts'ēL - wa - la - g'i - lā′ - yē ts'ēL - wa - la - g'i -
la - yē wax - sEnxē - lîs lō - gua - yē hē ma mē mē
ha mē mē yē Ts'ēL - wa - la - g'i - lā′ - yē
ts'ēL - wa - la - g'i - la - yē wax - sEnxē - lîs lō - gua - yē
hē ma mē mē ha - mē mē yē. Ha - ma
ma a - ma - yē ha ama - ma - ma mai yē ha ama
mai - yē mai - yē hē ma mē mē ha - mē.


Hē ma - mē mē ha - mai hē ya Q'ā - q'a -
tswai — hai - dē, q'a - q'a - tswai — hai - dē wax - sEnxē -
lîs lō - gua - yē hē - ma mē mē ha - ma hē
yē. Q'ā - q'a - tswai — hai - dē, q'a - q'a — tswai -
hai - dē wax - sEnxē - lîs lō - gua - yē hē - ma mē mē
ha - mē Hē ma mē yē ha - mai he
yā Lans doqu - la - Lax ha - yē ya - wi-lē- nē ha
sa - ya Yā - yaxo - la - g'i - ta ya hē ma mē mē ha - mē.

[To page 465.]

SONG OF HA'MSHAMTSES.

1. Tō'yuqawalag·ilaa'mXtELala na'nualak'uēnēk·as'ōs LŌ'koalak·as'ō.
Going between mountains on earth he was magic in your body real your supernatural real.

2. TōXtokoālag·ila ahai'sk·asLELax·is na'nualak'uēnēk·as'ōs LŌ'koala-
He is going farther real your magic in your body real your supernatural
k·as'ō. Tōgulêsiлaus tōgulêsk·as'ō.
real. Therefore you walk farther walking farther real.

3. Qoē'sqoēsk·alag·iläik·asLELax·īs na'nualak'uēnēk·as'ōs LŌ'koala-
Going still farther real your magic in your body real your supernatural
k·as'ō. Qoē'sg·ilēsiлaus qoē'sg·ilēsk·as'ō.
real. Therefore you go farther going farther real.

4. 'Tsā'ts'ēqElaqulaahaisk·asLax·īs nā'nak'uēnēk·asōs LŌ'koalak·as'ō
He will sing his ts'ā'eqa song real your imitated by all real your supernatural real
hā'mats'Elaqôlaitsēlelalai nā'naXtsōaidē. Hē'x·atsēmōLlai g·î'ltsa-
great hā'mats'a cry will be imitated one. You are the one the first
qolisa hā'mats'Elaqôlîsk·asē nā'nualakumnōkōs LŌ'koalak·as'ō. Hēix·a-
one to utter the cannibal cry magic in you supernatural real. You are
tsēmōLlai g·î'lg·alisaiasō mEx'ā'lisaiasō na'nualagumnōguasōs LŌ'koa-
the one first in you thrown into you magic in you supernat-
lak·as'ō. ME'Xulasōgwōs ōwanxēlîs nā'la. ME'sElasōgwōs wāxsEn-
ural real. Desired you at the edge of the world. Desired as food at both ends
xēlîts nā'la.
of the world.

TUNE, RECORDED BY F. BOAS.

koa - la - k'as ha ma - ma- mai hai - ma - mai ha - ma - ma

ha - ma - ma mai. Tō-gu - lîs - i - La - us } ha - ma- mai
Tō-gu - lôs — k'as - ō }

ha - ma ma - mai hai- ma- mai ha - ma- mai ha - ma - ha mai

ha - mē ma - ma mē ma mē mai ha- ma mai ha ha - ma

ma - mai ha - ma - mai ha - mē - mai ha - mai

hā - ma ma - mai ha - ma- mai ha- mai ma ha - ma ha - mai.

ha ma hē a hē ā hā ma ma- mai hai- ma- ma

hai ma- ma ma mai hai- ma- mai ha - ma- ma ha - ma- ma mai.

[To page 466.]

SONG OF HA'MSHAMTSES.

1. LaistaisELayuXdōX dō'xdEquisElak·āsxEn na'noalakulāliLk·asa 1
We went all around the world looking around on my beach magic in house real
lax owē'stas nā'la.
there all around the world.
2. Lā'mXdowisEn qax·usai'asō'kuas L'ā'L'aqulak·asdē. ME'tsēt-
There I went it was put upon me the red cedar bark on his body. That is derived
g·iLaus LēuXts'ōwētk·as'ō yîs ōwē'stas nā'la.
from you you can not be imitated all around the world.
3. Qoe'qoaxulag·īLdEn, qoē'qoaxulag·īLdEn, qoā'qoaxuLaXstaig·îlîs- 5
The raven cried for me, the raven cried for me, the raven's cry came to my
tsōXdEn Las Qoā'xqoaxoā'lanuXsīwēk·asdē lax owē'stas nā'la.
mouth of Qoā'xqoaxoā'lanuXsiwaē real past at all around the world.

[To page 466.]

SONG OF NŌ'NTSÎSTALAL.

1. K·ik·ā'LElag·ilak·as owaē'Lax g·āxaLō'dayūk·as owaēLax nō'n-
Making them afraid real good this what he gave you real good this making
tsîstag·ilak·as owae'Lax s Lō'koala.
crazy real good this of the supernatural one.
2. Qoē'qoapalēLilak·as owaēLax g·āxaLō'dayūk·as owaēLax nō'ntsîs-
Scattering them in the house real good this what he gave you real good this making
tag·ilak·as owaēLax s Lō'koala g·īa yahē. 10
crazy real good this of the supernatural one g·ia yahē.

[To page 467.]

SONG OF BEAR.

1. Wī'g·ila tsEns wE'nēnēLans wunX'uaits'ēnē Lqaux nā'nax sa
How shall we hide we hide on the beach before the bear this terrible
yā'lag·ilisax nā'la ō'waē hō.
moving around the world world ō'waē hō.
2. ĒisnēsLEns qans lEmbEtā'lēsē qans tsēmtsēk·'ā'lisē? Qē'yāL
Better we we go under ground we cover our backs with dirt? Yes
qō wēyōLanE'mnōX Laxō sa nā'na sa sE'mtsōyōwalits'ēiax sEns nā'la.
we might not be found by the bear ter-rible of the mouth great this of our world.

[To page 468.]

SONG OF BEAR.—LA'LASIQOALA DIALECT.

Haiâ'â, Lē'qatsilalaida nā'nxatsilalaida, la'mlaōX hai'qamayaLaqē lāx 15
Haiâ'â, take the great name say bear that, he is going right to the highest (copper) to
Lē'LeqamnōX sīs ē'iaLEla. Sā'xauLElasEns xō'maLElaLasēa, sā'xau-
having name of enslaved tribes We shall have a battle, we shall
LasEns tsē'naXulaLasēa.
have trouble.

[To page 470.]

SONG OF FOOL DANCER.

1 Wai′g·a, wai′g·a, wai′g·atsēlaxus sa haya haya ha. Sās dō′qulaʟā
Go on, go on, go on great you ha! haya haya ha. Do not look
xaha t'ā′t'ēkoamāk·a ḥa ha aE′lkoamāk·a ha ha sēyaXsīlaXdEn sa
the curdled blood on the water ha ha blood on the water ha ha those whom I cut of the
nū′naʟōlîswutdEnʟa.
fool dancer's companion I shall be.

[To page 471.]

SONG OF FOOL DANCER.

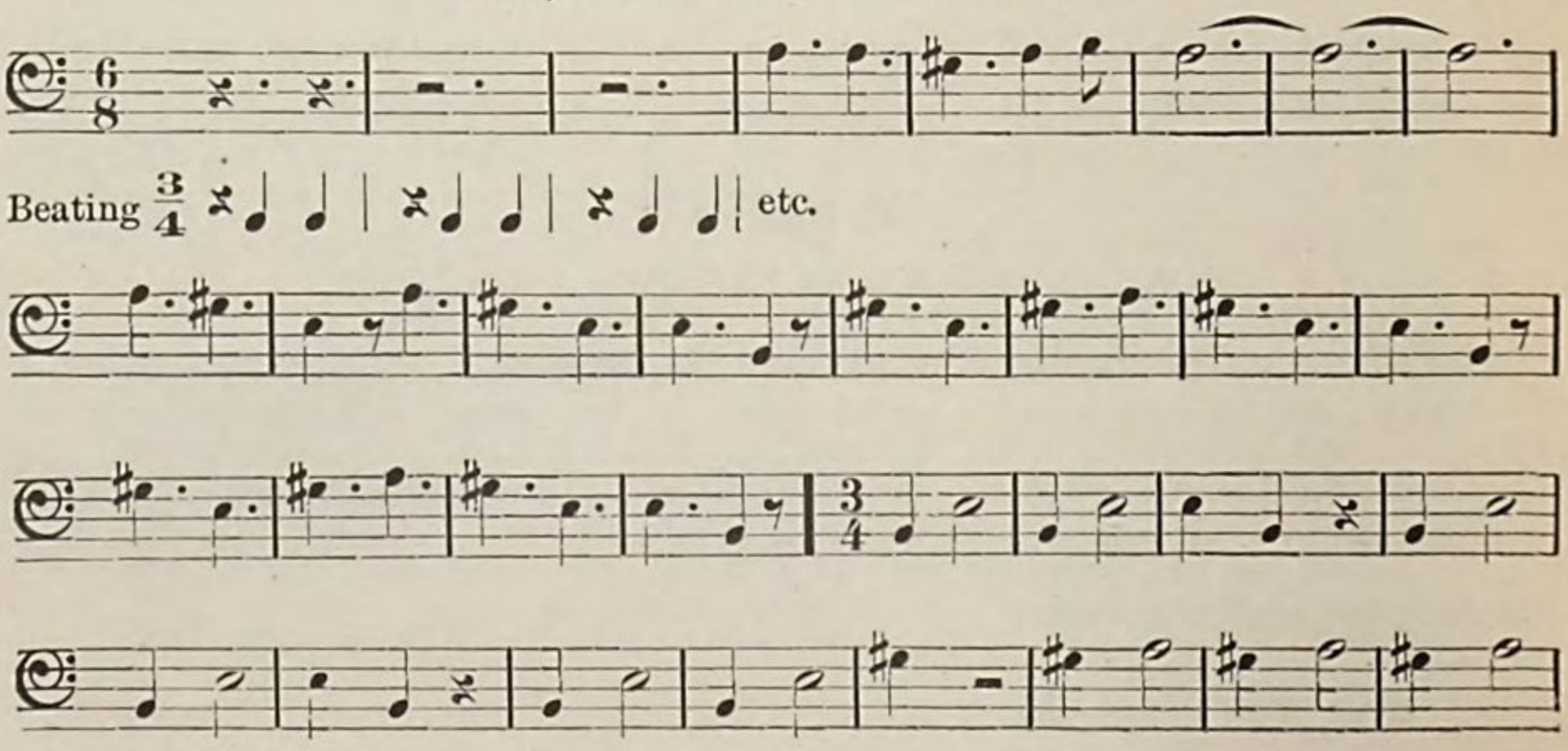
1. Sā s hēx·ēk·ā′ya hēx·ēk·ā′ya xans nEmō′XtsēXwē hawai′k·as
Ha! disturbing disturbing our great friend greatest
5 nEnō′lō lamā′siʟ g·ā′x'aʟElāxtsēʟtsē.
madness came on to him great.
2. G·în g·āx q'ā′mē g·în ts'ōpEnkwāyasōs hē″yuwa Lāx yā′la'yuwa
To me came, to me it was given into my hand the tool the tool (for killing)
Lāx k'wā′waqayō Lāx x·ū′sūtalayū Lāx yā′lag·ilisa yā′la xEns
instrument for severing heads instrument for cutting off heads going all around the world crazy our
nEmō′kuîx hawā′k·as nEnō′lō lamā′siʟ g·ā′x'aʟElāxtsēʟtsē. La'ms
friend greatest madness came on to him great. He
g·îng·înʟElxʟā′lalisila wa haiya.
killed all old and young wa haiya.

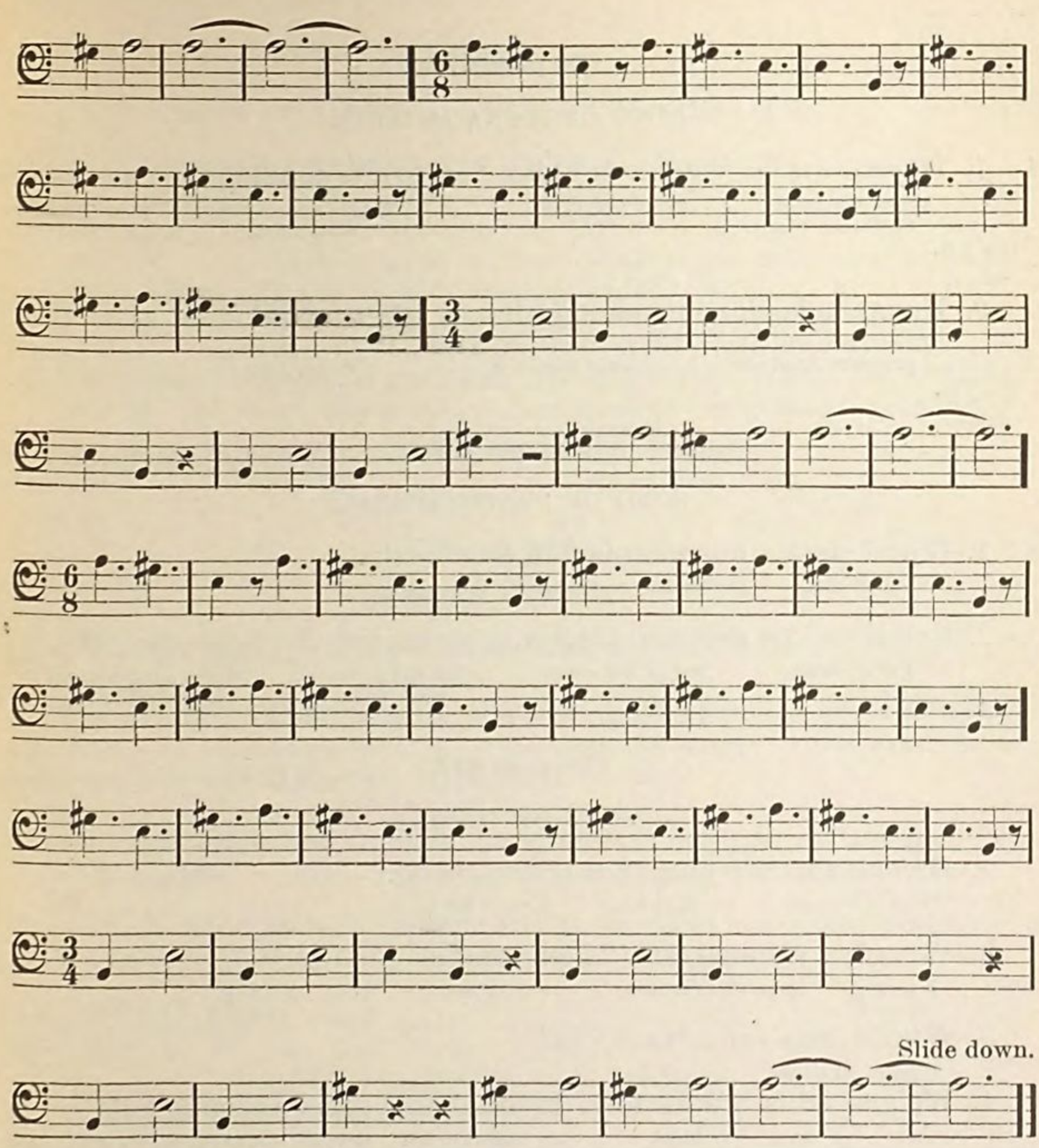
[To page 471.]

SONG OF FOOL DANCER.

10 1. Kuē′qaya kuē′qayatsēa qa nanoalaktsēk·as tsō′noqoatsēk·as.
Mad mad great that magic great real tsō′noqoa great real.
2. Ai qa q'alā′na q'aq'alā′ya lā′xa bEguā′nEm qas kuē′qayatsēk·as.
Ah that he torments carries on his arms at the man that his madness great real.
3. Wī″laya haia Llahamqō′wa q'E′mq'ak·ōwa lāx bEguā′nEm qas
Eating all haia crushing bones and flesh eating skin and bones at man that his
kuē′qayatsēk·as ya.
madness great real ya.

TUNE, RECORDED BY J. C. FILLMORE.





[To page 471.]

SONG OF FOOL DANCER.—LA'LASIQOALA DIALECT.

Waiē ai'tsik·asōL! Lēaanā'lag·ilitsumk·asō! 1

Waieh! oh wonder! he makes a turmoil on the earth!

Ai'tsik·asōL! sāoltalag·ilitsumk·asō, g·ōxg·ōxqoalag·ilitsumk·asō.

Oh wonder! he makes the noise of falling objects on the earth, he makes the noise of breaking objects on the earth.

[To page 472.]

SONG OF NĀ'NAQAUALIL.

1. Tsē'tsēqauasLēla haē Lō'koala.

All gather around you while you are dancing in the house haē supernatural one.

2. Q'ē'q'aqauasLēla haē Lō'koala, dō'daqauasLēla haē Lō'koala.

Many gather around you in the house haē supernatural one, they gather to see you in the house haē supernatural one.

3. Q'au'stiselasLēla haē Lō'koala, mā'mEnLēasLēla haē Lō'koala. 5

Walking right up to you in the house haē supernatural one, asking you for food in the house haē supernatural one.

[To page 472.]

SONG OF NĀ'NAQAUALIL.

1 1. Hēyaqōwiʟīla yū'yak·ōwēʟīla ʟēs ts'ā'ts'aēqɛlāqum ʟaus ts'aē-
Across the middle of the house — rows of property — this is your winter dance song — your — winter

qā'ya.
dance.

2. Hayaʟbā'lasilaʟē mamubalasilaʟēs ts'ā'ts'aēqɛlaqum ʟaus ts'aē-
Everybody will take property from her — taking four blankets to wear from her — this is your winter dance song — your — winter

qā'ya.
dance.

[To page 472.]

SONG OF NĀ'NAQAUALIL.

5 1. G·ā'xk·asʟɛn hā'matsɛlaqolīʟō ʟō'koala.
I shall come — saying hāp on the beach — the supernatural one.

2. G·ā'xk·asʟɛn g·ā'xwuʟtōalisai'a ha'msiwag·ilîs ts'aēqēwēg·ilîs.
I shall come — out of the canoe — with the hā'mats'a head mask — with the winter dance head mask.

[To page 474.]

SONG OF HĀ'MAA.

1. Hā'maōxda lā'g·anɛmɛns q'ulā'ʟ lā'qē.
There is hā'maa — we shall not — live — for he is there.

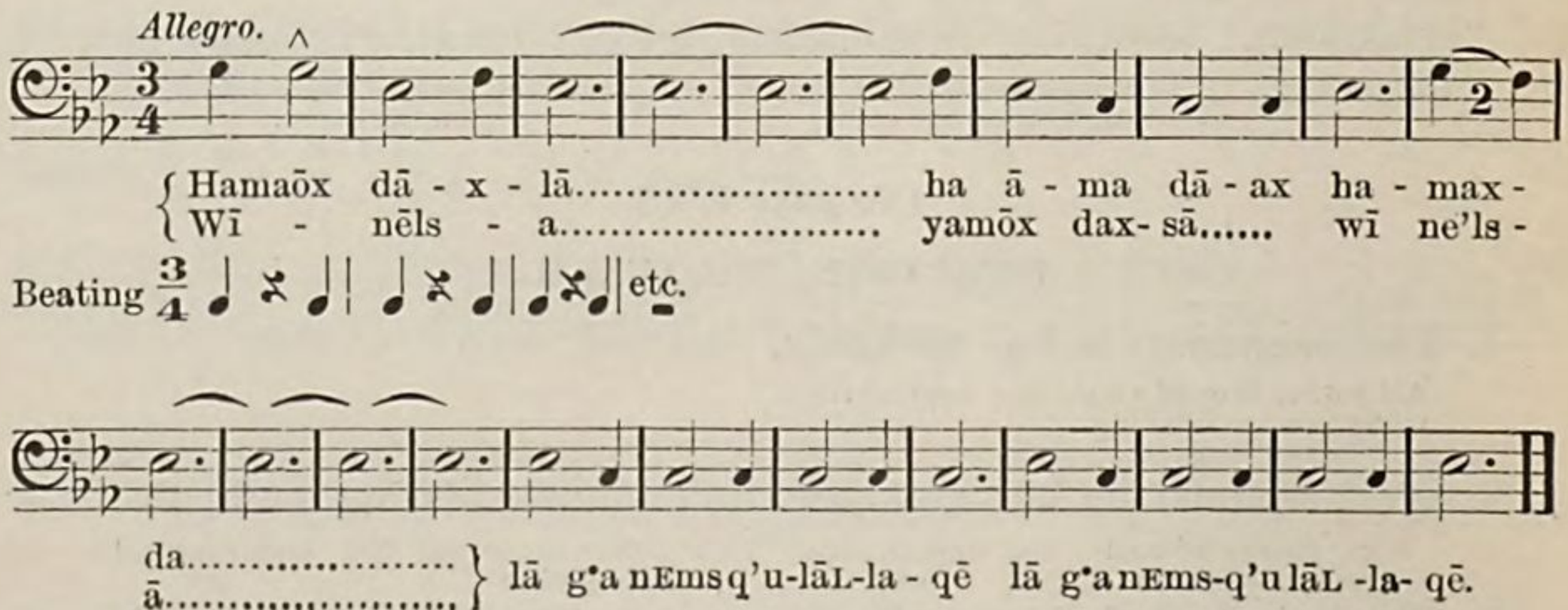
2. Wī'ne'lsā yūmoxdaxsā' lā'g·anɛmɛns q'ulā'ʟ lā'qē.
Where on ground — there it is dangerous — we shall not — live — for he is there.

3. Wī'nēsʟɛns wunā''ʟasōXsa?
Where — shall we — hide?

10 4. Wē'g·a x·îns wu'nx·'idēa lā'bɛtālisʟa qɛns tsɛ'mtsēk·ilālîs qa
Let — us — hide — go underground — that we — cover our backs with dirt — for

hā'maē sa yā'lag·ilisax nā'la.
hā'maa — terrible — going around the world. — world

TUNE, RECORDED BY F. BOAS.



[To page 474.]

SONG OF SALMON.—LA'LASIQOALA DIALECT. 1

1. G·īg·a'xs'aisEla yūxdEnō'guas mē'mēōXoānak·asdē.
Many coming ashore they with me salmon real past.

2. Hā'laqas g·ā'g·āx'ālag·îlisēilōL qa'ldōyōwē's lō'wa. HaiuXs'aisE-
For they come ashore to you post in middle of heaven. Dancing from the

lag·ilitsEmXtEm nō'guas mē'mēōXoānak·asdē.
outside to the shore with me the salmon real past.

3. Hā'laqais haixoanōmag·ailōLai hēiLg·ōtmē îs lō'wa. LĒ'Laxoya
For they come to dance to you at the right side of heaven. Overtowering

mā'yāLas aix·ts'umk·ēyaLēXdês mē'mēōXoānak·asdē. 5
surpassing outshining of the face the salmon real past.

[To page 475.]

SONG OF SALMON.

1. Q'ā'q'ēXs'ālisEla sa q'ā'nōmalag·ilisa mēyōXuā'nE.
Many came to find on the world salmon.

2. HaiLa mē'yoXuānak·asdē nē'nXuag·ilīLak·asdē nau'alakulīLa
That salmon real past approached him real past magic in the house

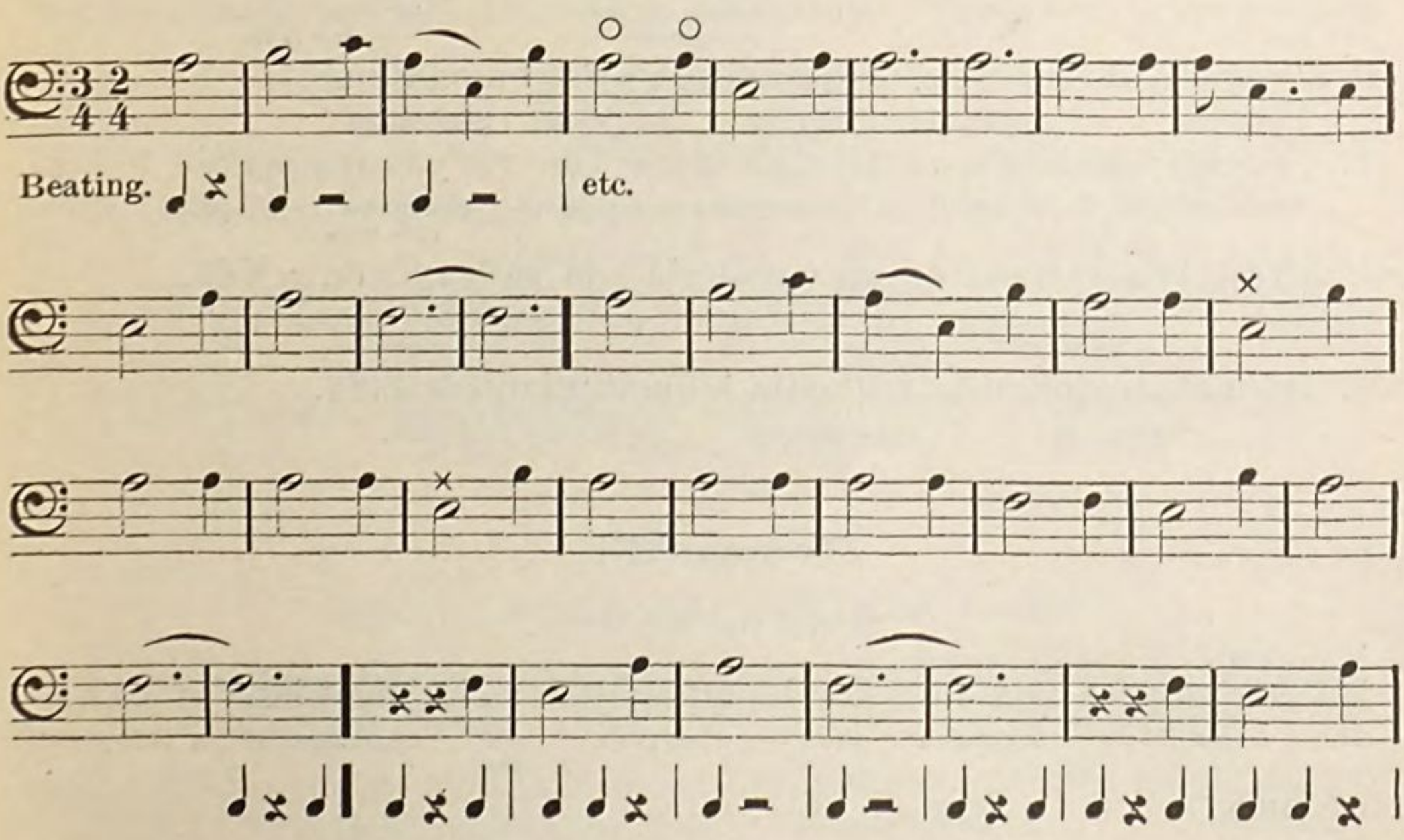
nau'alakwas'o nau'alakwas'ō hayō hayō yi yi.
your magic your magic hayō hayō yī yī.

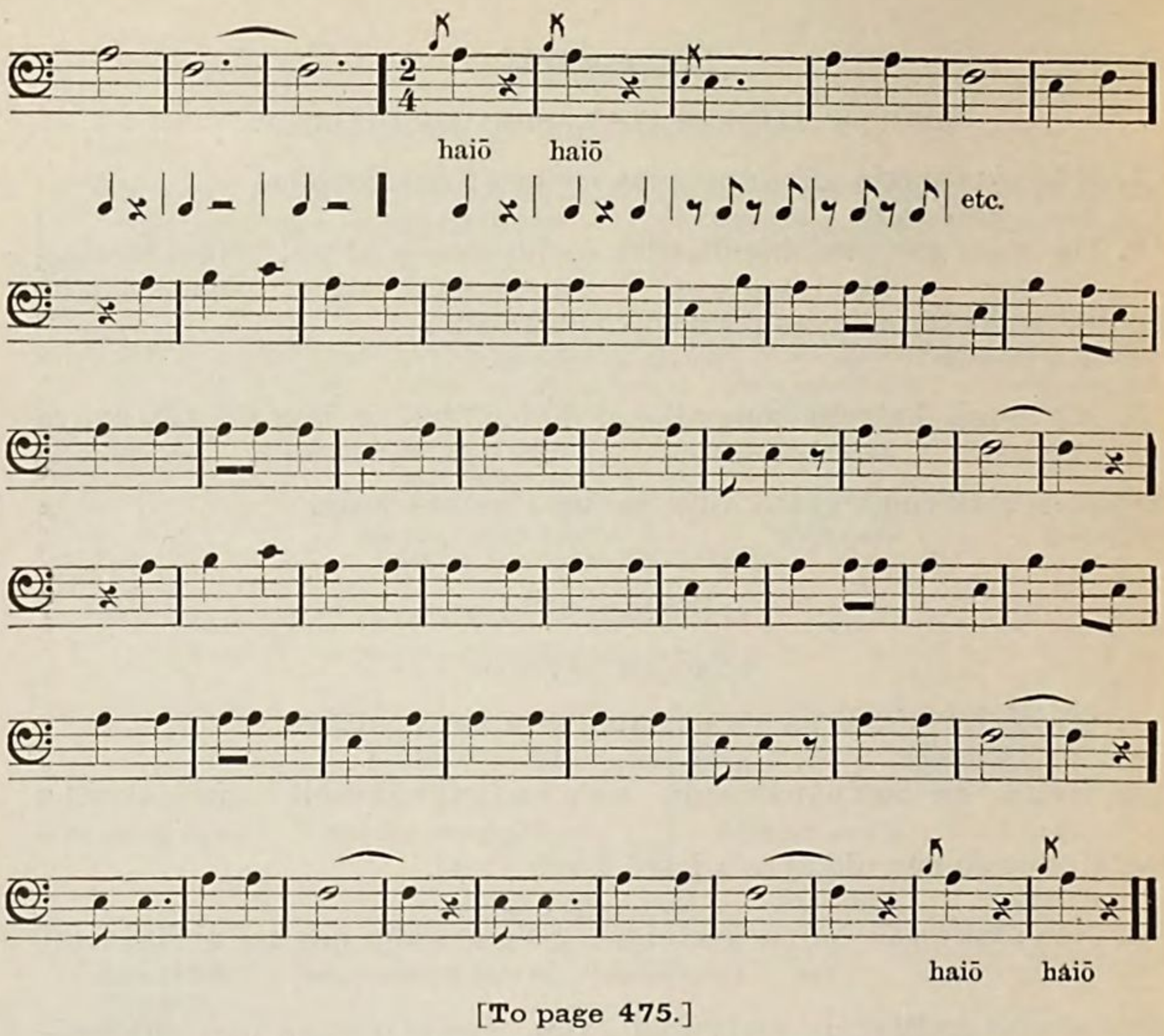
3. Nau'alakwas'ō haiLa g·axēLtsē g·ā'g·axs'ālîs qas mē'aisilak·asdē
Your magic that they came for coming ashore for chief of salmon real past

qāxs wīwēiLEmlitsEma amiaxa'laLēxlōL nau'alakwas'o nau'alakwas'ō 10
for property too heavy to be carried those who praise you your magic your magic

hayō hayō yī yī.
hayō hayō yī yī.

TUNE, RECORDED BY J. C. FILLMORE.





[To page 475.]

SONG OF SALMON WEIR.

1. Lā′XdEn laiyahau′guē, lā′XdEn laiyahau′guē hamamai guā′gōL-
I go laiyahau′guē, I go laiyahau′guē hamamai working at
tsēwalag·ilîsk·as'ōwasqai gōlayūgulisk·as'owaiqai mEnahāxaisk·as'owai-
my salmon trap real good salmon trap on beach real good picking up out of the trap real good
qai, ō'wēyā′xē lō′lupstūts'ōwîlstEmk·as'ōwai hamamamē.
the raven empty orbits in trap real good hamamamē.

2. Lāxoaix·Lāxoaik·āmxsLē LaXsEmä′Xdē yā″yaxōyōqoaxdē lē′las-
Stand still stand still who stands on top past who make the tide rise past whirl-
taiLaiXde, ts'nēstaLaix·de wā′wiyak·ilaXdē yā″yaxōyōqoaXdē.
pool past, where the tides meet past his skirt past who makes the tide rise past.

3. Hā′matsalaqolāmXs Lō′koala hā′matsElaqoak·āsdē.
Crying hāp supernatural one crying hāp real past.

[To page 476.]

SONG OF WASP.

Ha ȣoā′nōsEns nā′x·″idēa xoa ha′mtsats'ēax sa hā′masElatsēa; hawā-
Ha do not let us approach the wasp nest of the wasp dancer great; it is great
k·asā′nuXLa
danger.

[To page 476.]

SONG OF KU'NXULAL.

1. Hā'laqalisɛlala haiaʟīlaqasatsē'k·asa yuwaiʟla xā'palisayax 1
Rushing down the supernatural one great real that one grasping

nɛ'msqɛ'makua lē'lqolaʟai haiōo hai hō.
one tribe haiōo hai hō.

2. Hā'laqalisɛlala haiaʟīlaqasatsē'k·asa yūwaiʟla hē'xalisɛlatsēa
Rushing down the supernatural one great real that one coming straight down great

qoā'quʟɛmlîsk·asa gu'ngōʟlālîsk·asa wō'lasqɛmlîsk·asa hē'iɛmutk·asa
the one who burnt the real face (of the tribe) making them fall real before him in a great heap real the rest of food (dead people) real

Hō'ʟaqanustsēk·as Ku'nkunXulēg·isēs nā'la haiōo. 5
Thunder bird great real Thunderer of the heaven haiōo.

3. Hā'laqalisɛlala haiaʟīlaqasatsēk·asa qā's lēiʟōs āwumsqɛmslīsɛla-
Rushing down the supernatural one great real that you go from tribe to tribe

k·asʟa lāyuʟaqōs xāxap'alak·asa g·ē'g·iqamēmanɛXk·asa s lēlqo-
real you went trying to grasp chiefs small real of tribes

laʟaʟaia haiōo.
haiōo.

[To page 476.]

SONG OF KU'NXULAL.—LA'LASIQOALA DIALECT.

Ku'nXulaʟk·asʟēxai'. Sāk·asʟōL'iē Ku'nXulaʟk·asʟēxai'.
Thunder bird dance this will be. Wonderful it will be, Thunder bird dance this will be.

[To page 476.]

SONG OF QŌ'LÔC.—LA'LASIQOALA DIALECT.

Qoā'la x·îns hawīnalɛla ts'ē'koeāxʟɛns g·ī'qɛmayē. 10
Don't let us drive him away our bird our chief.

Qaū'losk·as'ō k'oā'ʟaʟɛla nā'qōʟioēîs sɛns nā'la.
The real eagle sitting on top the middle of our world.

[To page 477.]

SONG OF WOLF.

1. Lā'XdɛN g·a'g·alaʟg·īwalîsg·i'liāsa nūn, yi hi hi a ha hī.
I go to the standing place of the wolf, yi hi hi a ha hī.

2. Lā'XdɛN naqōʟeōlitsɛn lāx g·ō'kuas nūn, yi hi hi a ha hī.
I go to the middle of the rear at his house the wolf's, yi hi hi a ha hī.

3. G·ā'xmēsɛn wilōʟɛlēisa nau'alak'uinēs nūn yi hi hi a ha hī.
Thus I all for me the magic on the body of the wolf yi hi hi a ha hī.

[To page 477.]

SONG OF WOLF.—LA'LASIQOALA DIALECT.

1. Ia'yaqɛlaqulag·āsʟɛn g·āx wā'wakulīsa qā'mōtalīsa qa s wē'ig·iʟōs 15
I make noise of giving blankets come barking on beach howling on beach for you will

q'oā'xalīsʟa wā'las tɛmna'Xua yōs q'ulyakuēyäg·ilītsîs g·ī'g·iqama'ya.
grow as great the same (as forefather) you the oldest one on top chiefs.

1 2. Awila q'ā'lamLai wā'LdEmā sa ā'LanEmā sEns g·ī'g·iqama'yē.
Wonderful against you the word of the wolves our chiefs.
Yēhēi; nē'x·laē qants g·îlnēk·ElēiLa p'ā'p'aya'yaL lāx p'ā'sag·ilaya
Yēhēi; he said we children with us asking him to give blankets to give blankets
mā'xoag·ilaya maoxsistālisax lē'lqoalaLai. Yihēi.
to give blankets to each tribe to give blankets to the whole world tribes. Yihēi.
3. Haia, wäx·salaiau'LEmaiL, xEns g·ī'g·iqama'ya, āLoya guā'yēg·ilisa
Let us try to tame his face, our chiefs, else you will go too far
5 Xuā'Xuēqalisa wä'lag·ilaya nēmālisilaya q'amē'lēqag·ilaya nō'ng·ēaX-
swinging making life short shortening life making fall highest
towē. Yihēi.
wolf Yihēi.

[To page 479.]

SONG OF WOLF.

Yahē yahē.
Yahē yahē.
Qapamā'lō K·ēx·ā' nEqamäi yaxs NōLt'aqālag·ilîs.
He put on his head K·ēx· the middle of the face of the NōLt'aqā'lag·ilis.

TUNE, RECORDED BY F. BOAS.

[To page 479.]

SONG OF TS'Ō'NOQOA.—LA'LASIQOALA DIALECT.

1. Iā' halselamXdEn wīts'Emg·ilisa a'lguLmaig·ilisa q'ābōqolalīsa
Ia! I was a little behind not on time the blood of murderer where a heap had become putrid
hai'amōta ha'amōt yā'lag·ilîs g·ax nā'la.
whom he had killed rest of food warrior of this world.
2. Haitsēq'amaxōL LĀ'wisīlaya wai'adig·ilag·a kuēxag·ilōLa g·āxLēx
You great one made angry not to take pity made to kill to come
wī'wung·i'laLax lē'lqolaLē.
to make poor the tribes.

[To page 480.]

SONG OF TS'Ō'NOQOA.

1. Q'ā'q'āLElītsatsēa Ts'ō'noqoatsēa haiō dō'lEmx·itEla LE'lEmg·itEla
Trying to carry on arms Ts'ōnoqoa great haiō making numb making dead
Ts'ōnoqoatsēa haiō.
Ts'ō'noqoa great haiō.
2. Hā'manēkuilatsēa dō'lEmx·itElatsēa hau'ak·as Ts'ō'noqoa.
Causing nightmare great making numb great dreadful Ts'ōnoqoa.

[To page 480.]

SONG OF IA'K·ÎM.

1. Q'ā'xōlitsēLalalai ia'g·imas g·a nā'la.
He will rise the ia'k·im of this world.
2. P'ō'liqōlamasēi ia'g·imas g·a nā'la.
He makes the sea boil the ia'k·im of this world.
3. Iā'qamg·ustâlaLlai ia'g·imas g·a nā'la.
He will throw up blankets the ia'k·im of this world.
4. Iā'qamg·ustâlaLlai q'ā'Xulaēnēlas ia'g·imas g·a nā'la.
He will throw up blankets out of the sea the ia'k·im of this world.
5. Ia'yakiLaLax lē'lqoalaLē ia'g·imas g·a nā'la.
He makes the face o the sea ugly tribes the ia'k·im of this world.
6. Lā'nsk·iLalaLa ia'g·imas g·a nā'la.
We shall be afraid of the ia'k·im of this world.

[To page 481.]

SONG OF SĪ'SIUL.—LA'LASIQOALA DIALECT.

Satsēas laidēa sEns g·ī'qamēk·asō. Sīsiul laidēa sEns g·ī'qamēk·as'ō.
Oh great the dance of our chief real. Sīs'iuL dance of our chief real.
La'mēlawēsōX mā'xs'alī'saLax nE'msqamak'ua lē'lqolaLai laidēa
He will, it is said, cut in two one tribe the dance
sEns g·ī'qama'ya.
of our chief.

[To page 482.]

SONG OF CHIEFTAINESS DANCER.

1. AōmalaLnōklEns namōku'malisa ōwanxēlîs nā'la.
Chieftainessdance we are told our who stands far ahead (the chief) edge of world.
2. Aōmalaqulatsēlelai hā'mats'Elaqôlîsla ō'mayatsēLai LŌ'koala.
Chieftainess song great will be hā'mats'a song will be chieftainess great will be supernatural.

1 3. Lā′wulq'alag·ilisa L'ēyānalag·ilisa aō′maXdEmēîsōs ō″mayatsēLai
Sound of copper ringing of copper place of your chieftainess chieftainess great will be

Lō′koalatsēLai.
supernatural great will be.

[To page 483.]

SONG OF GHOST DANCER.

1. Lē′laxaisLELa'yuxdE no′guas lēloaLānak·asdē Lō′koalag·āama.
We went down I chief of the ghosts real (past) thus I became supernatural.

2. Tōaxsai′sElayūXdōXs lēloaLānak·asdē Lō′koalag·īLama Lō′koala.
I was made to walk down by the chief of the ghosts real (past) thus I became supernatural supernatural.

5 3. Ais'ak·ōttsōXdE nō′guas ais'ak·awēk·asō′wa qai lē′loaLānak·asdē
Put pretty things on forehead I pretty things on forehead real good the chief of the ghosts real (past)

Lō′koalag·īLa.
making supernatural.

[To page 483.]

SONG OF GHOST DANCER.—LA′LASIQOALA DIALECT.

G·ā′xEnō′laiōL lē′loalēnôx. Mā′sōxs lEg·itElayōs lēlâalēnôx Lā′na?
I come to you ghosts. Why do you make noise of ghosts sense takers?

Mā′sōxs lō′lomūtEla'yūs lēlâ′alēnôx Lā′na? G·ā′xk·ElsElā′nai g·a
Why do you make the house reverberate ghosts sense takers? Coming from the beach

Lā′Lēqailēalanai Lā′na. G·ā′xk·ElsElā′nai ts'a′ts'ēLwailēanai Lā′na.
calling sense takers. Coming from the beach to be famous sense takers.

[To page 483.]

SONG OF GHOST DANCER.—LA′LASIQOALA DIALECT.

10 1. Wī′lg·ustâlîLtsō Lā′naXdōs lēlâ′alēnôx Lā′na.
They come out of ground from you ghosts sense takers.

2. Pō′ēk·'alasō LānaXdōXs lēlâ′alēnôx Lā′na.
The voice of hunger comes from you ghosts sense takers.

3. Mā′mEnLēatsō LānaXdōs lēlâ′alēnôx Lā′na.
We come to get enough from you ghosts sense takers.

[To page 484.]

SONG OF NA′XNAK·AQEML.

1. Lā′xolîsLaiLaux q'ā′laqolītsōs ha wa′nXēlitsēs lō′wa.
You will rise you known by all ha around the edge of the world world.

2. La′xolîsLaiLaux ts'ēLwalag·ilîs lāx ōwa′nxēlitsēs lō′wa.
You will rise famous everywhere at edge of the world world.

15 3. La′xolîsLaiLaux waiLa′xalag·ilitsā′sō wī′nalag·îltsēs lō′wa.
You will rise being vanquished rival chief of the world.

4. Nēxsowaix·tig·En äiyElk'oā′lag·ilitsasas wī′nalagîltsēs lō′wa.
They say that I beg food from the rival chief of the world.

[To page 487.]

SONG OF MĀ'MAQ'A.

Wai'eg·a dā'doxsEmē ai xēs nauahā'lakuē häiya ha ha, ha häi häi 1
Go on! look around for your magic häiya ha ha, ha häi häi
ya'ha a a hai xēs nauahā'lakua.
ya'ha a a hai for your magic.

[To page 487.]

SONG OF MĀ'MAQ'A.—LA'LASIQOALA DIALECT.

1. Wäik·asla! dō'qoaLayaLg·as nau'alakuahaus LĒ'qaLēaig·ilîs-
Go on! see your magic you whose name is over all others in the
k·as'ai.
tribe.
2. Wäik·asla! dādōxsEmēLg·as qā'minayōL LĒ'qaLēaig·ilîsk·as'ai. 5
Go on! look after your sacred implement you whose name is over all all others in the tribe.
3. Ya, hēik·ayasmîs wī'ōsōguilaLg·as nau'alakuahausyōL LēqaLēai-
Ya, truly it is making that they have no time to escape your magic you whose name is above all others
g·ilîsk·as'ai.
in the tribe.
4. Ya, hēik·ayasmîs ts'ēLtsaguilaLg·as qā'minayaLg·ausyōL LĒ'qa-
Ya, truly it is shortening life your sacred implement you whose name is
LĒaig·ilîsk·as'ai.
above all others in the tribe.

[To page 487.]

SONG OF T'Ō'X'UÎT.

1. Wē'g·a x·îns ē'x'uidēya. Wē'g·a x·îns ē'x'uidēya ā sîns wī'na- 10
Let us take (?) Let us take (?) with our what we
nEmtsēyaqEns yā.
gained in war yā.
2. K·'ēsLaxtEn qoē'qEmxsāla lāx nō'LEmaxsēE wī'nalaxdēaxlōL
I did not turn my face back to those who bothered me paddling for you
qā'sta.
friend.
3. Wēix·us māx'ē'dea, wē'g·ax·us mā'x'ēdea s haisīs qoā'LqoaLag·i-
Go on throw it go on throw it yours that kills every
layōs xu'mtxumtag·ilayōs lā'lēx·ilits'ayōs wī'nalaxdeaxqōL qā'sta. 15
body that burns everything that turns the world face downward paddling for you friend.
4. ÂmlaXdEn hē'yaqala sē'xoaqala lax bē'bEnaqaualisLai.
Only I passed them paddled past at the lowest ones under the earth.
5. ÂmlaXdEn nē'xamxsEla wā'tamxsEla g·ā'xēsē xā'xōsila lāx
Only I pulled them into the canoe hauling a string of them into the canoe for them to bail out the canoe at
yi'nasEla wī'nalaxdēaxyōL qā'sta.
war canoe paddling for you friend.

[To page 488.]

SONG OF T'Ō'X'UÎT.

1. Qoē'sEnxă'laiitsEmXdEn lā'XdEn qoēsEnxalaiitsEms hainōma
I have been at the far side of the world — I have been — I on the far side of the world — true

naualakuē' laXdEn qoē'sEnxElēts'Emsīa ai'k·as ai ai naualakuē' wē wē.
magic — I have been — I on the far side of the world — real — ai ai — magic — wē wē.

2. Wilō'LElēsāXdEn laXdEn wi'lōLElēsaX nanualakwena'ēk·a'sa.
I got all — I did — getting all — kinds of magic on body real.

G·ā'XdEn wī'lōLElēisayaqēia ai ai ai'k·as nau'alakuē wē wē.
I came — getting all — ai ai — real — magic — wē wē.

3. Nā'x·ōLalēisaXdEn; g·ā'xdEn nā'x·ōLalēisayax nanualak'uēnai'-
I got everything, — I came — I got everything — all kinds of magic on

k·asa hēya. G·ā'xdEn nāx·ōLalēisaqēa ai ai ai'k·as nau'alak'uē wē wē.
body real — hēya. — I came — I got everything — ai ai — real — magic — wē wē.

[To page 492.]

SONG OF Ō'LALA.—LA'LASIQOALA DIALECT.

1. Q'ā'laqolitsōXdEnaya laix·dēk· lāg·aLElai lax ts'ēxp'ēqtsēa lāx
The world knows me — when — I reach — at — the pole of the winter ceremonial — at

ts'ā'tsaēqalask·asai.
the winter ceremonial real.

2. QE'ltitsīmasīLayawēiXōs qE'ltitsīyoLai qE'ltōyōwais lōwa.
Hold up your great one your — post — post in the middle of the — world.

3. Alōmitsimāsiɪaya hēyahē wēiXōs alōmitsiyōLai alX'aayE'ms
You who keeps solid — hēyahē — you — keeping solid — who holds firm

lō'wa.
the world.

4. Qā'laxētsīmasīLäi lāx qā'laxēasōs qā'laxēams lō'wa.
You are interlocked like logs — to — you who is interlocked — interlocked support of — world.

5. Q'autitsimasiLäiwēiXōs q'ō'titsīōLai q'au'toyowais lōwa.
You keep from falling down — keeping from falling — support of the — world.

[To page 494.]

SONG OF TS'Ē'K'OÎS.—LA'LASIQOALA DIALECT.

1. ŌmataLā'lag·ila qā'minatsētsē'aqos iä!
Make silent — the sacred implement inside — great your — iä!

2. LēLēxqä'lag·ilitsux tEmî'lqoaLalaXūs nau'alaqtsēaqōs iä.
Everybody names you, — let it be quiet — your great whistle, — iä,

3. LēLēxk·a'lag·ilitsux haiaLilaqas.
Everybody names you — shaman woman.

[To page 494.]

SONG OF SĪ'LÎS.—LA'LASIQOALA DIALECT.

Hēiē iā'nai hēyē.
Hēiē iā'nai hēyē.

1. Yā'satsēa sEns q'ā'laitēya!
How great — our — famous one!

2. Yā′satsē wī′st'Ens Lē′qalaidēa! 1
How great our named one!

3. G·ā′xaxsalaiLō g·î′lEms nā′noalak. Yā′satsē wī′st'Ens Lē′qalaidēa!
He comes in his canoe the dreaded magician. How great our named one!

4. Ya k·'ēsk·aiasLEs nō′lnēqalaLa k·'ēk·alēqalag·as Lō′koētsēak·as
Ya not be troubled be afraid of the great supernatural one

qā′laitēa.
the famous one.

5. G·ā′g·aiqEmayaLg·as sī′siuLg·a s Lō′koētsēaLg·as. 5
Go to the head chiefs sī′sīuL the great supernatural one.

6. Yā′satsē wīst'Ens Lē′qalaidēa!
How great our named one!

7. G·a nē′XsoaiXdēX guāguanXs'alag·īL hai′aLilaqas.
She said to me gave me advice the shaman woman.

8. G·a nē′XsoaiXdēX hamā′nēXsōlitsEns hai′aLilaqas.
She said to me we treat each other carefully the shaman woman

9. Yā′satsē wīst'Ens Lē′qalaidēa!
How great our named one!

[To page 497.]

SONG OF HAI′ALIK·ÎML.

1. Ts'ā′ēqauēda ts'ē′tsaēqauēda yē ya haa. 10
To whom all go for the winter ceremonial to whom all go for the winter ceremonial yē ya haa.

2. Hē′ilik·auēda hailik·auēda.
To whom all go for the hē′ilig·a to whom all go for the hē′ilig·a.

3. Ha ꞩoā′LEla amō′Llai q'ānēxLäiyäig·ī′litsō p'ā′LpaLEms yā′lag·i-
In the beginning you spread wings over your head which you used for flying the one who always

lisa.
travels.

[To page 498.]

SONG OF HAI′ALIG·ILAL.—LA′LASIQOALA DIALECT.

Ai au aia au Lō′koalai ya ai ya.
Ai au aia au supernatural one ya ai ya.

1. Haialig·ilaqulēsk·asLEla Lō′koala ts'ā′tsāequlaqulîsk·asLEla Lō′- 15
Haialig·ilaL song real supernatural one winter ceremonial song real super-

koala
natural one.

2. Ā′lak·asLōwisLas qoī′LaxElāsk·asLōL Lō′koala, ā′lak·asLōwîsLās
You truly will be the one you who will be untied supernatural one, you truly will be the one

ēyawā′lask·asLōL Lō′koala.
you to whom they speak about their wishes supernatural one.

3. Ā′lak·asLōwisLas mā′mEnLēask·asLōL Lō′koala.
You truly will be the one you whom they will ask for plenty of food supernatural one.

[To page 498.]

SONG OF WĀ'TANEM.—LA'LASIQOALA DIALECT.

1 1. WīxsElētsēlōX ts'ēLwumē'stalîs.

Not go into (Winā'la-g·ilis's) canoe — you who is known everywhere.

2. WixsElētsēlōX Lē'qumē'stālitsēxā'na.

Not go into canoe — whose name is known everywhere.

3. G·î'lEmk·asaxs nā'noalaXuā'na.

Feared by all — magicians.

4. Ā'tsoak·asa g·î'lEmk·asaxs nā'noalaXuā'na.

Great real — feared by all — magicians.

[To page 502.]

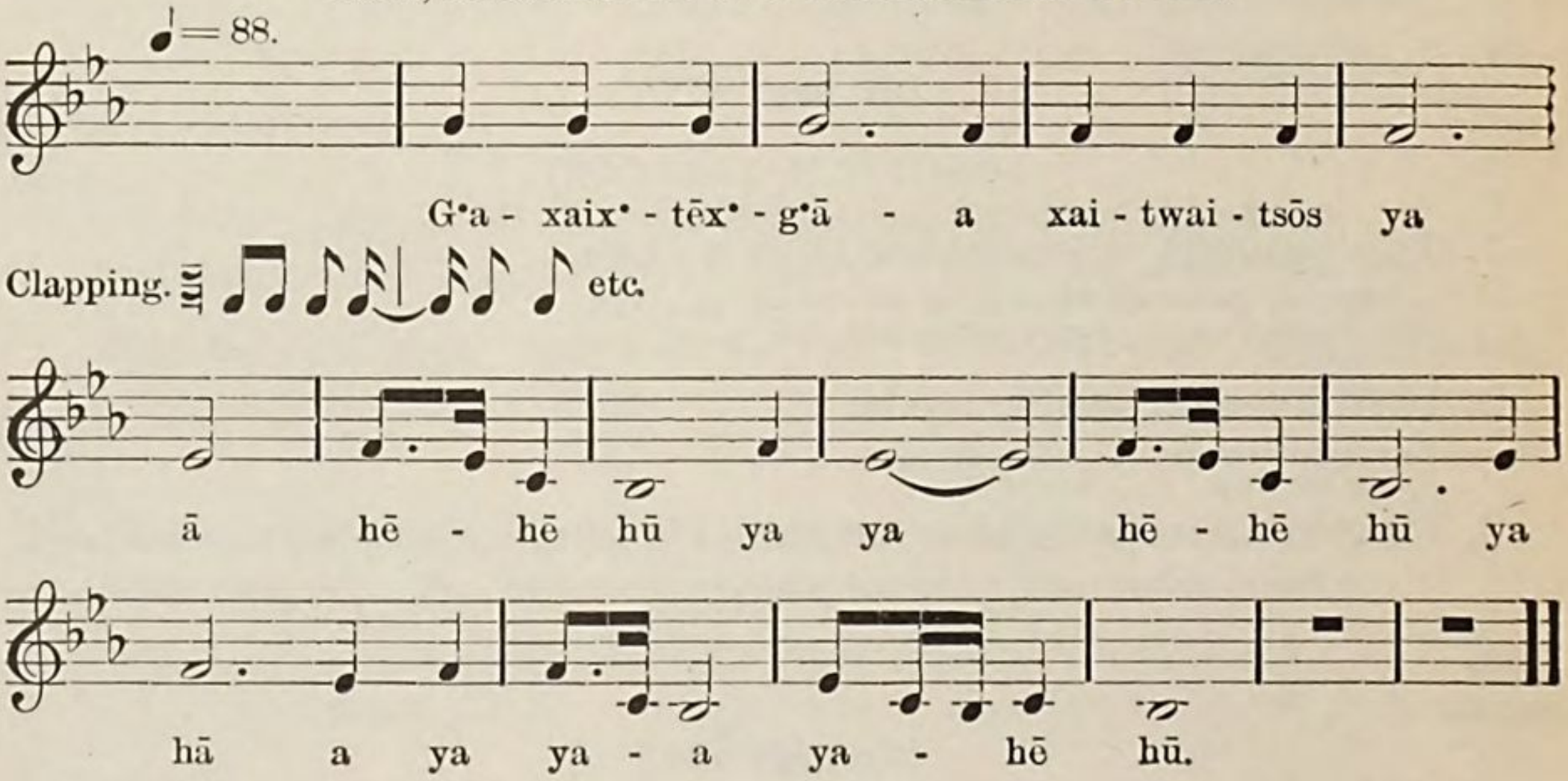
5 1. G·āxaix·tēx· g·axaitwaitsōs ya a hē hē hū ya ya hē hē hū.

He comes here — he comes down — ya a hē hē hū ya ya hē hē hū.

2. G·axaix·tēx· wā''latwaitsōs ya a hē hē hū ya ya hē hē hū.

He comes here — he rests at the foot of the precipice — ya a hē hē hū ya ya hē hē hū.

TUNE, RECORDED BY J. C. FILLMORE AND F. BOAS.



[To page 505.]

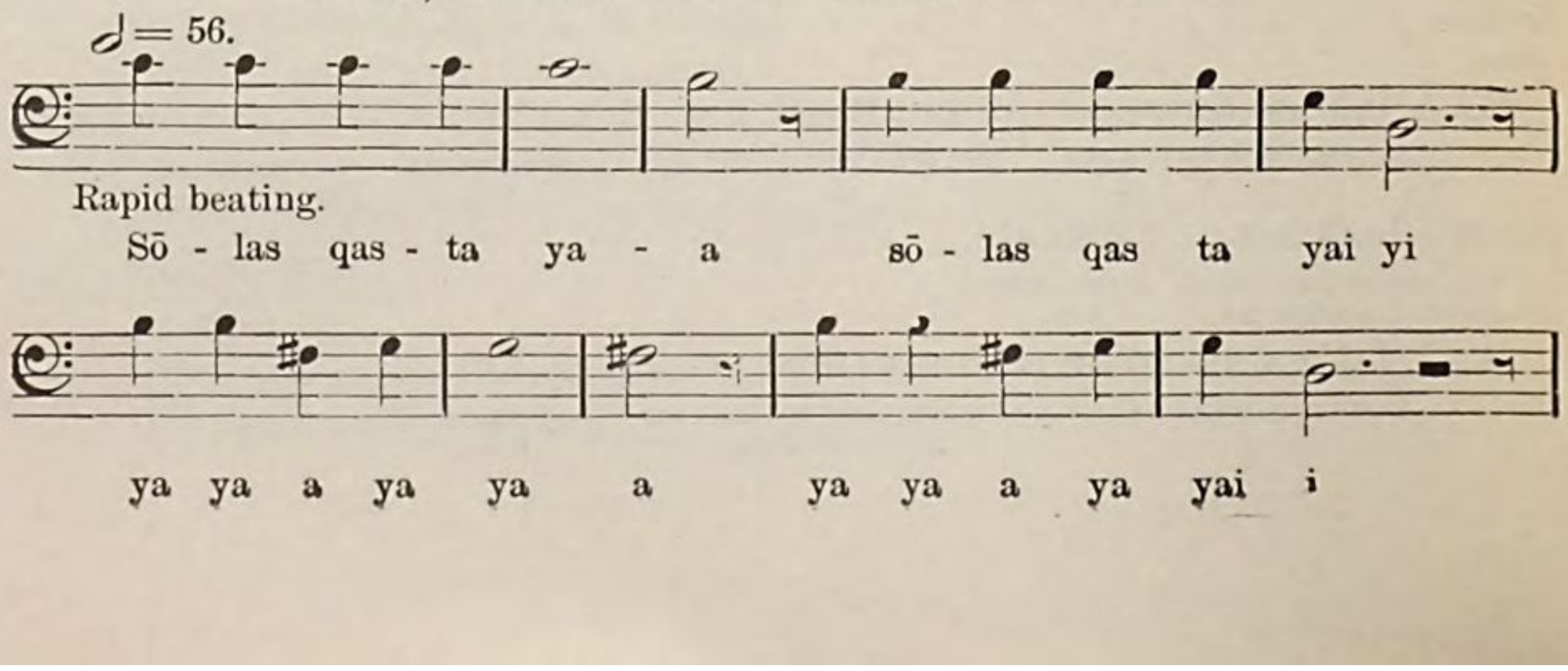
Sōla's qāstaya, sōla's qāsta yaiyi ya ya a ya yaa.

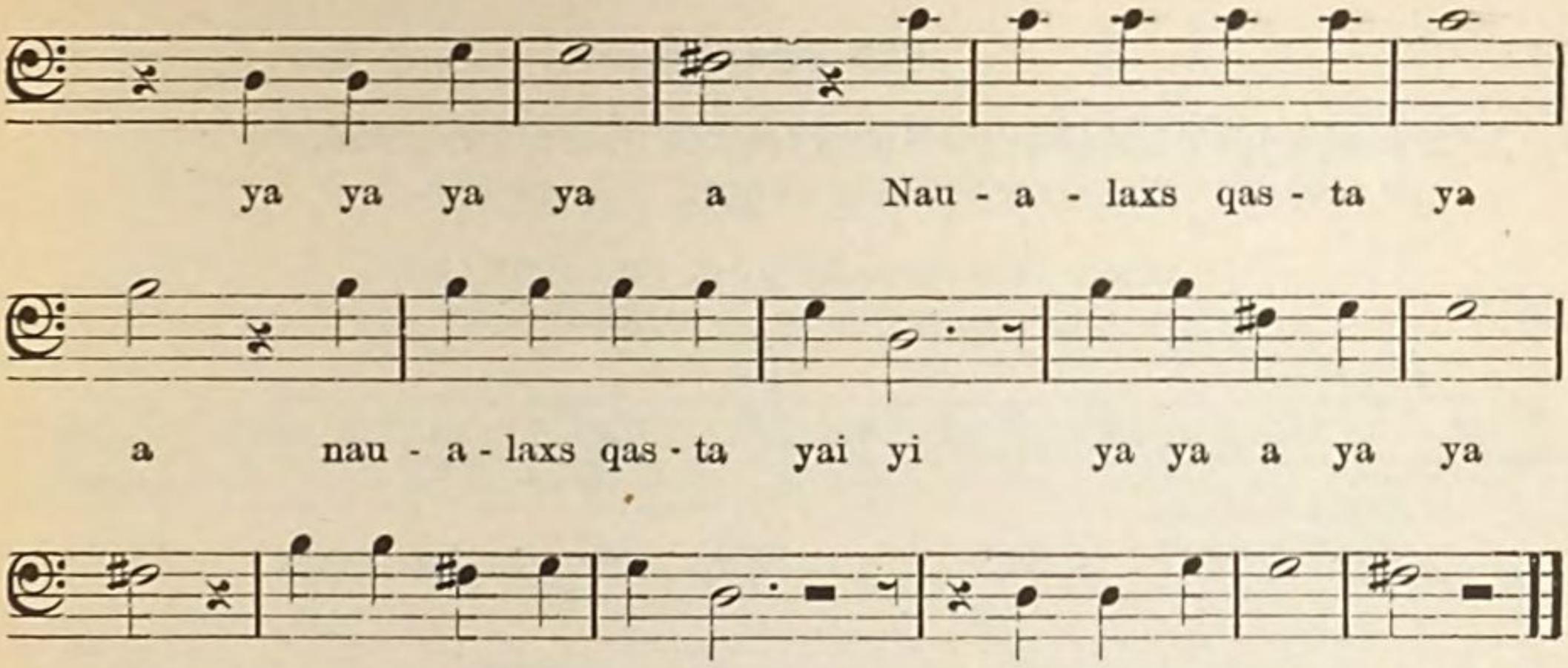
You friend, you friend ya ya a ya yea.

Naualaxs qastā'ya naualaxs qastā yaiyi ya ya a ya yaa.

Magician friend magician friend ya ya a ya yaa.

TUNE, RECORDED BY J. C. FILLMORE AND F. BOAS.



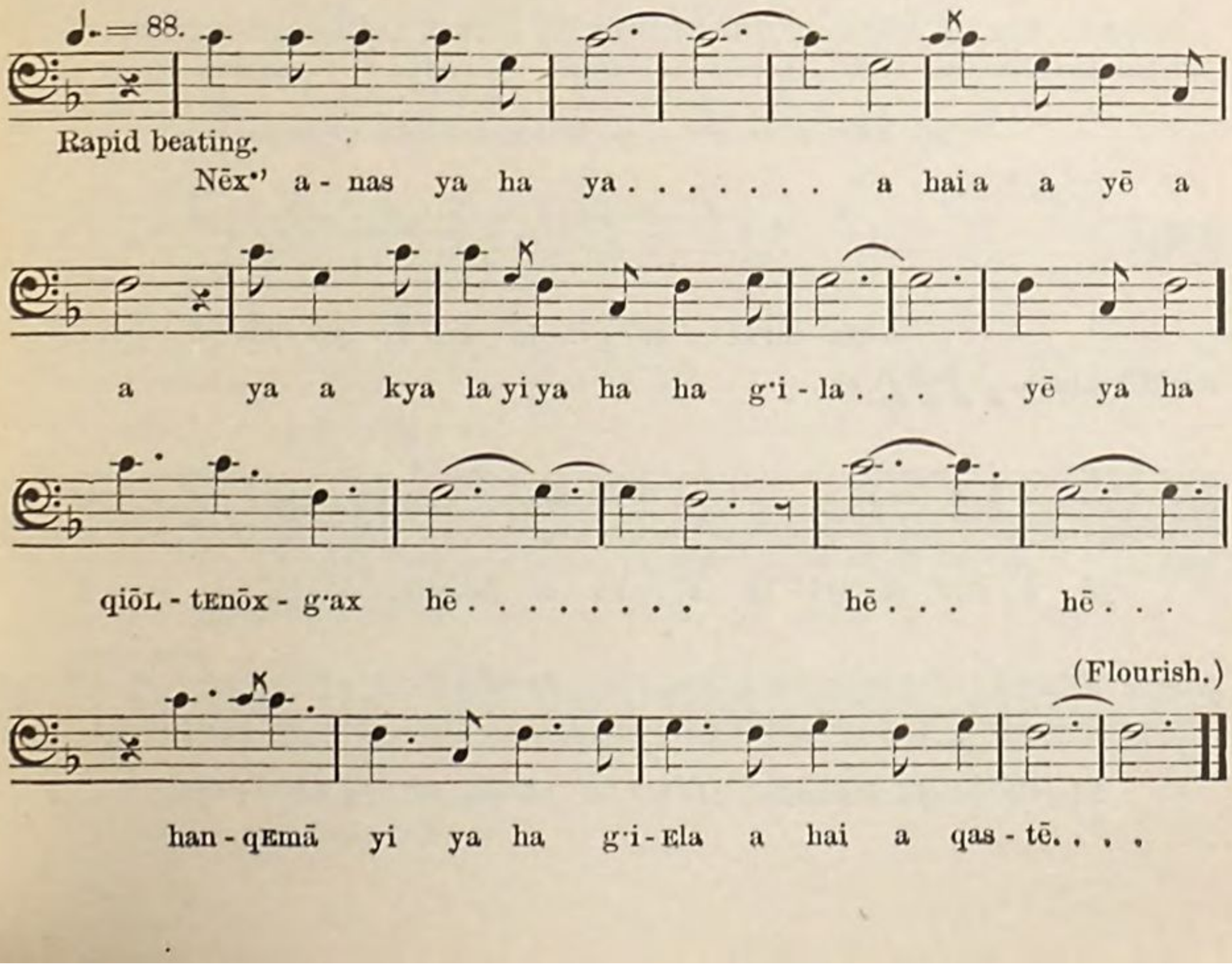


[To page 505.]

1. Nēx·'ana's ya ha ya a hai a yē a a yaak·ala yiya ha hag·ila LElē'- 1
You said that you ha ya a haia a yē a a bad weather yiya ha hag·ila cap-
yiya ha qēyō'LtEnōx g·ax hēi hēē hā'nqamē yi ya hag·iLEla a hai a
size ha we a long time here hēi hēē canoe in front of beach yi ya capsize in rough weather a hai a
qastē.
friend.

2. Nēx·'anas ya ha ya a haia a yē a a yaak·ila yiya ha hag·ila
You said that you ha ya a haia a yē a a bad weather yiya ia hag·ila
LElē'yiya qēyō'LtEnōx g·ax hēi hēē mēxayayī'ya hag·iLEla a hai a 5
capsize we a long time here hēi hēē sleeping capsize in rough weather a hai a
qastē.
friend.

TUNE, RECORDED BY J. C. FILLMORE AND F. BOAS.

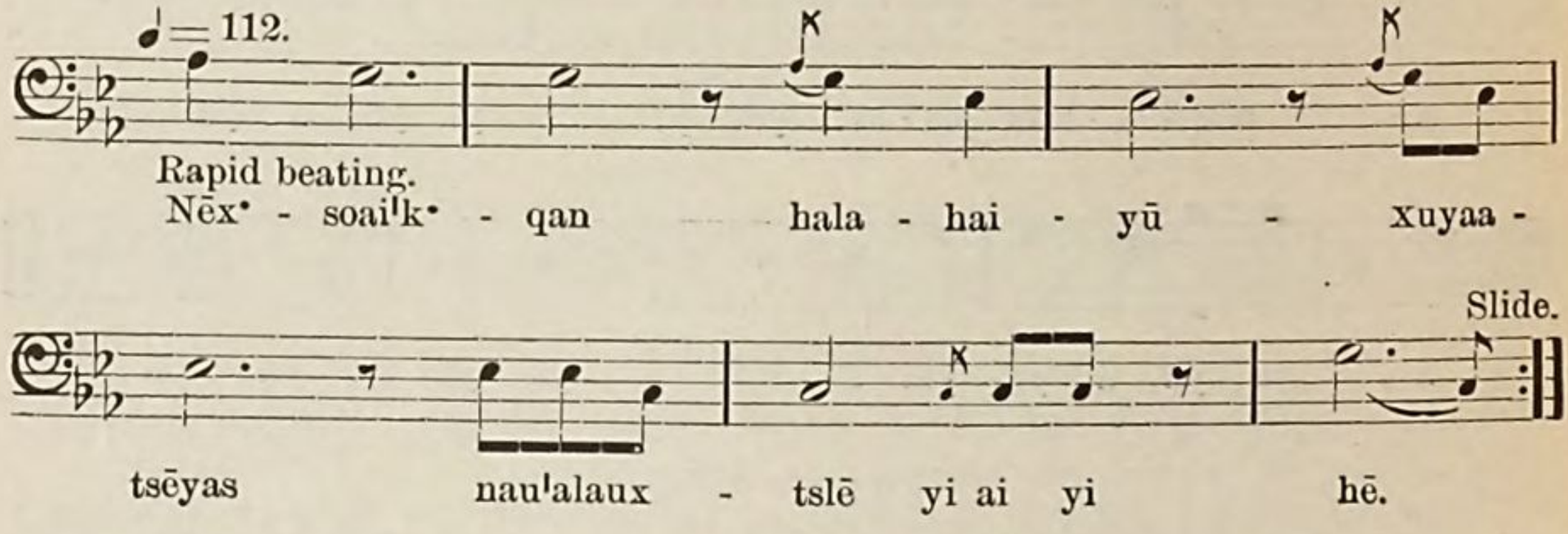


[To page 505.]

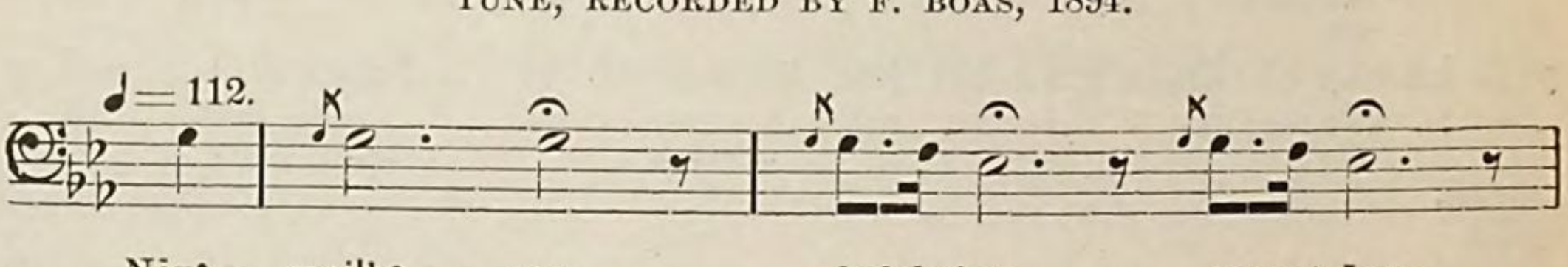
Nēx·soai′k·qan halahai′yūXuya′tsēyas nau′alauxtsELē.

He told me means of killing by his teeth magic great.

TUNE, RECORDED BY J. C. FILLMORE, 1892.



TUNE, RECORDED BY F. BOAS, 1894.

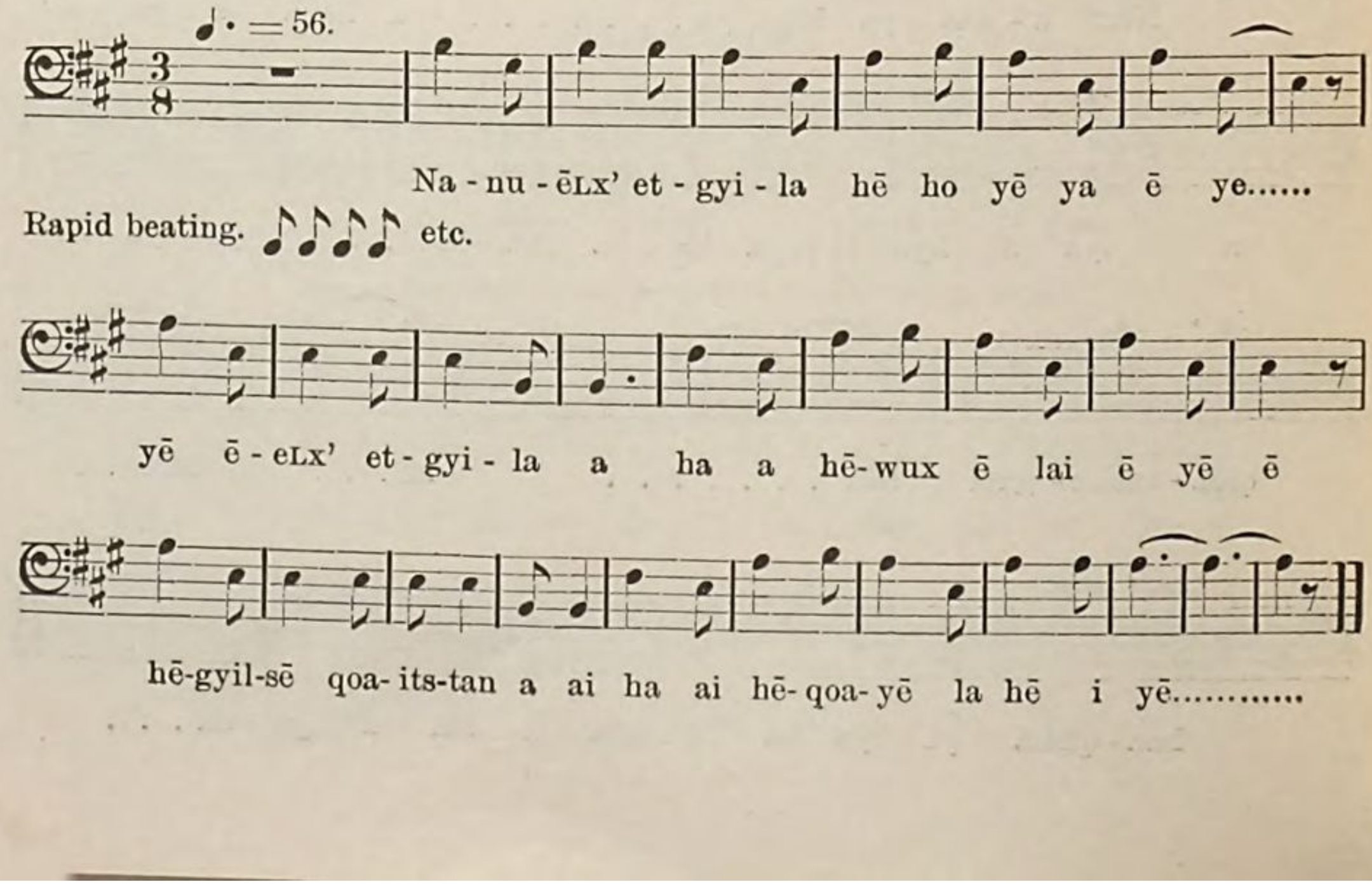


[To page 507.]

NānLEx'ētg·ila hēya nā′nuLElx'ētg·ila hēimx·Lai qoayā′lag·ila.

They make us confused hēya they make us confused that is that causes it.

TUNE, RECORDED BY J. C. FILLMORE AND F. BOAS.

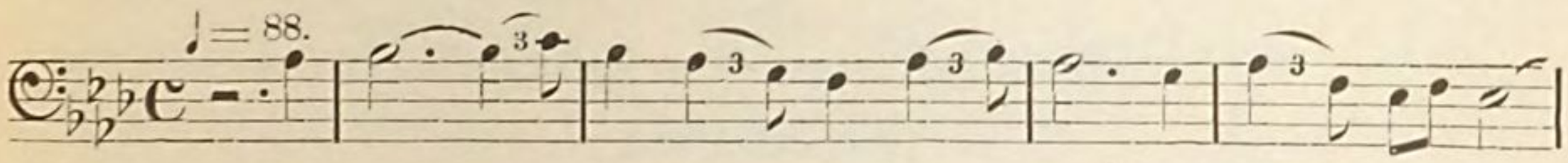


[To page 507.]

Nēx·sowaiXqan lalaXsawamatsō hōs nau'alaq ō nō'gua.

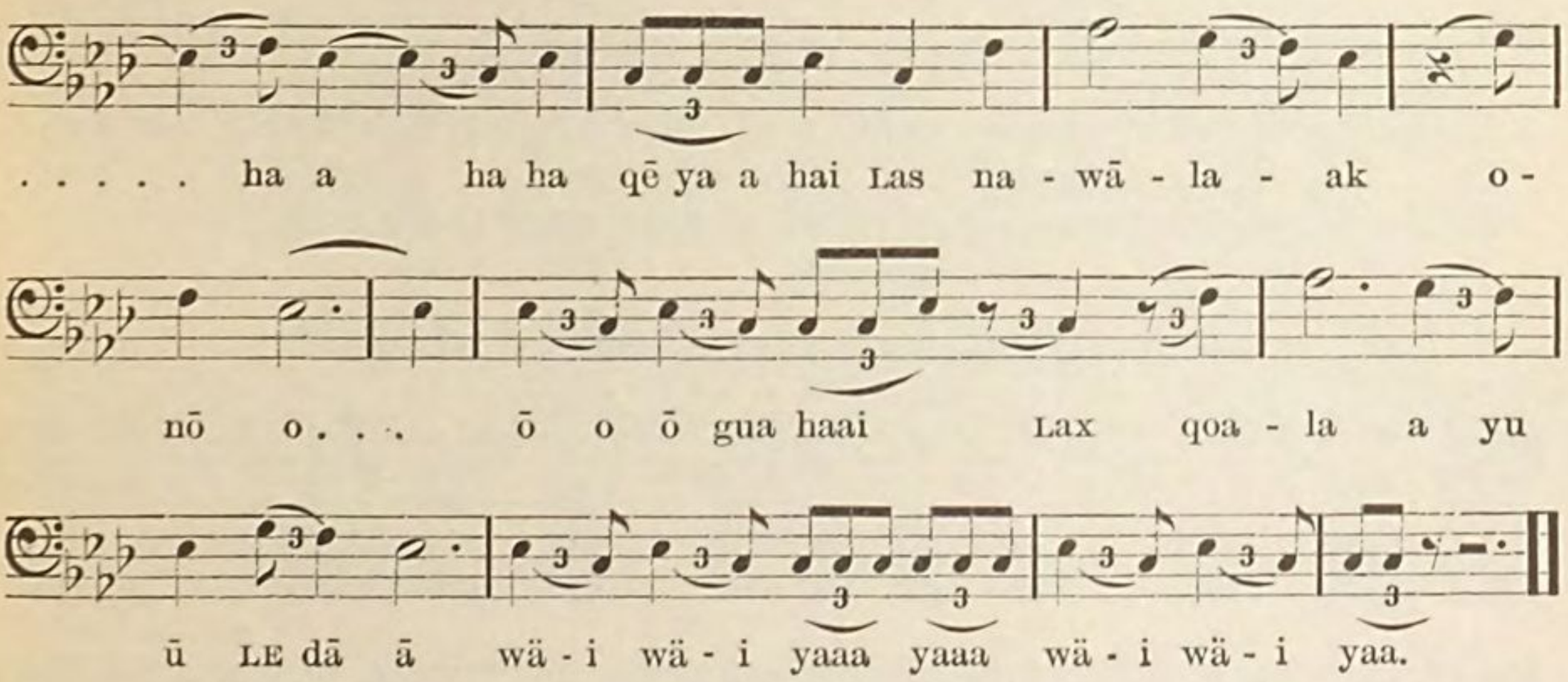
He said to me he was going to make me go through (the mā'wiL.) with his magic poor me.

TUNE, RECORDED BY J. C. FILLMORE AND F. BOAS.



Nēx·-soai - ai - ix·- qa - an ha a ya a ha ha aLē la . .

Rapid beating.



. . . . . ha a ha ha qē ya a hai Las na - wā - la - ak o -

nō o . . . ō o ō gua haai Lax qoa - la a yu

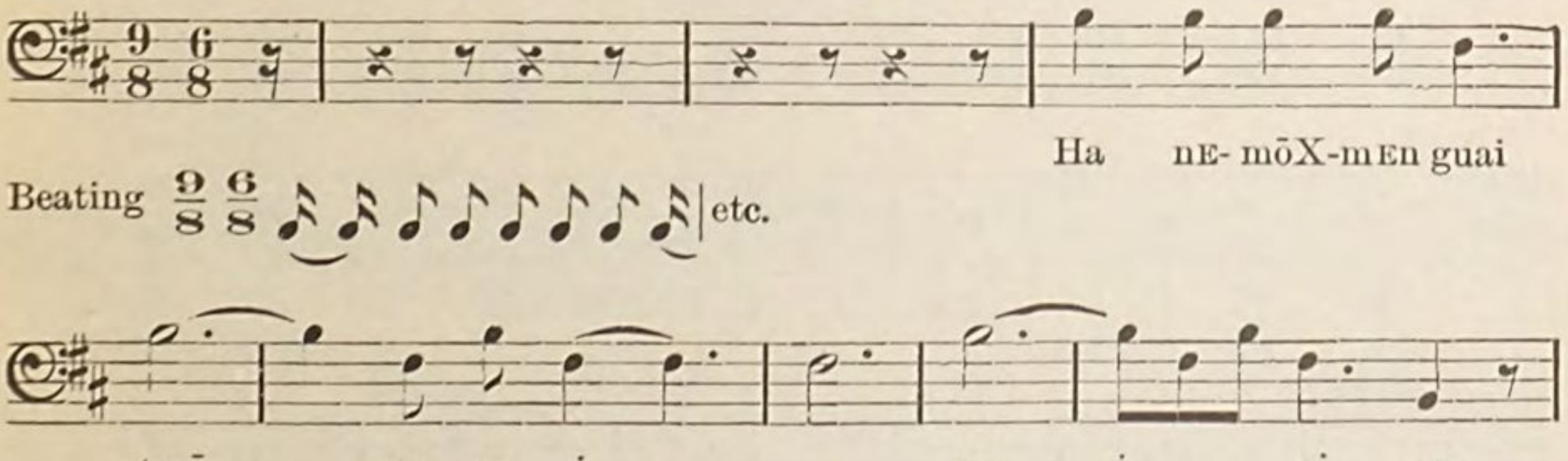
ū LE dā ā wä - i wä - i yaaa yaaa wä - i wä - i yaa.

[To page 508.]

Ha nEmō'XmEn ts'ā'eqa yī'ya, ha nEmō'XmEn ts'ā'eqa yī'ya.

Ha, I am the only ts'ā'eqa yī'ya, ha I am the only ts'ā'eqa yī'ya.

TUNE, RECORDED BY J. C. FILLMORE AND F. BOAS.



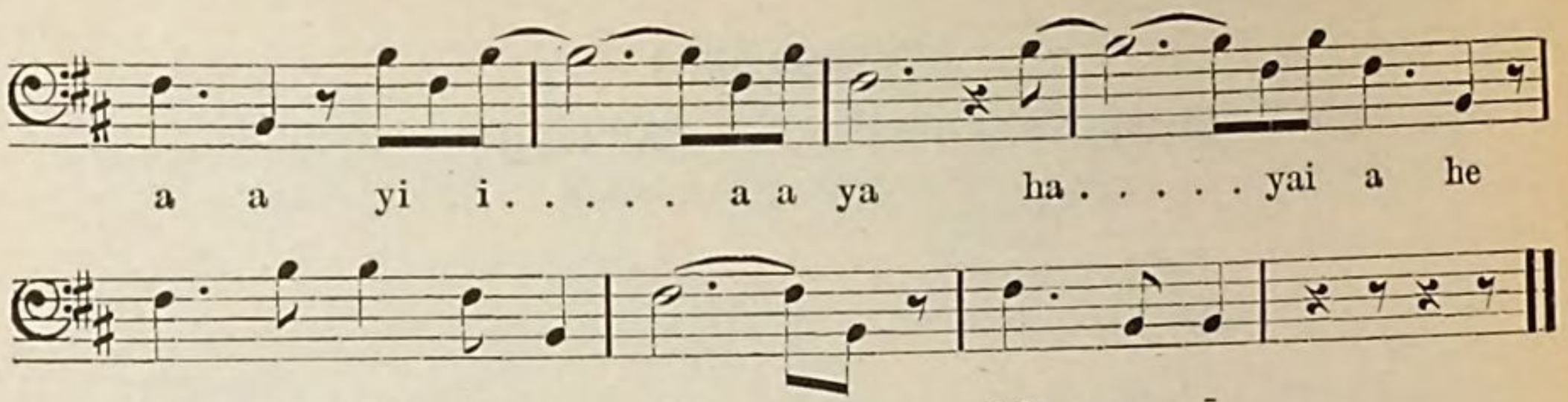
Ha nE- mōX-mEn guai

Beating 9/8 6/8 etc.

tsaē - - - qa ya i . . . . . ya - i . . . yi ya

Ha nE-mōX - mEn yu hē . . ē yi ya a a ē ha yai

a he ha a ha nE - mōX - mEn guai tsae - qa yi ya



[To page 508.]

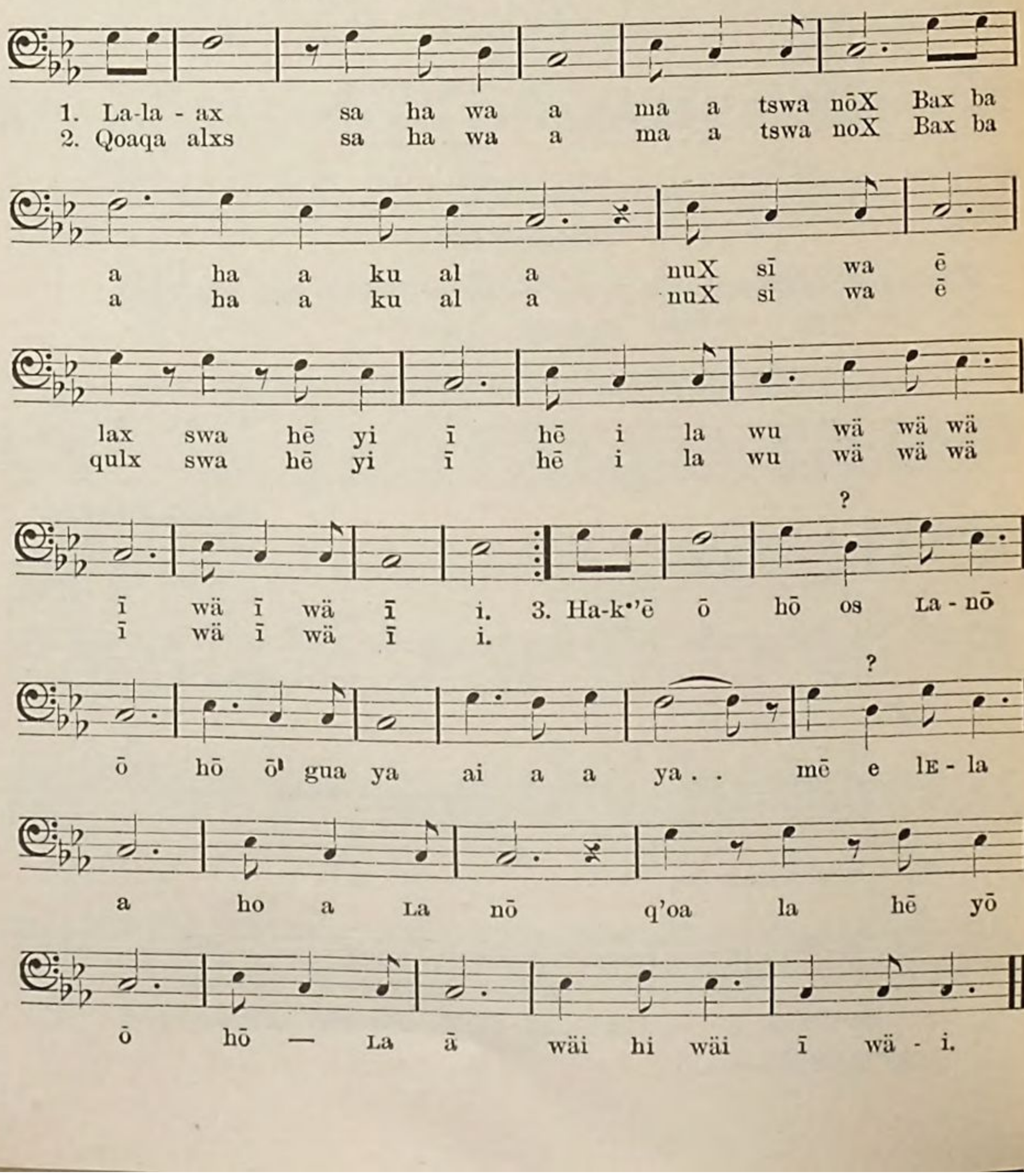
1. LālaxsE'wamātsōXdEnō'guas BaxbakuālanuXsī'waē lāxsōwag·ila
He makes me ts'ā'eqa me· BaxbakuālanuXsī'waē he makes me enter

haō.
haō.

2. Q'oā'q'ulx·sE'wamatsōwamo q'ulx·sEwag·ila q'ulXsEwag·īla wa.
He makes me pure making pure making pure wa.

3. Ha k·'ēohōsLā'noya aiā'mē'lala q'oalahag·īhēēLawō.
Ha, not I spoil (life) I the life maker.

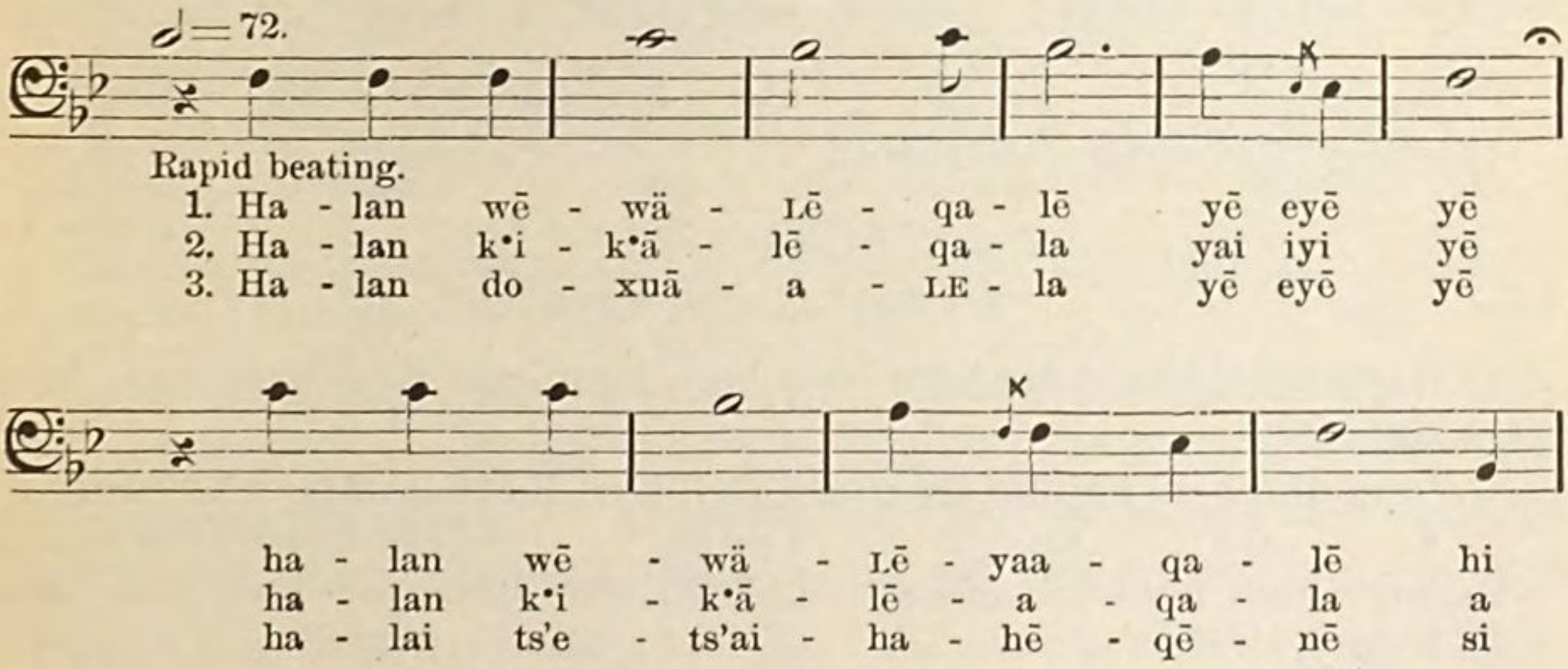
TUNE, RECORDED BY J. C. FILLMORE AND F. BOAS.



[To page 509.]

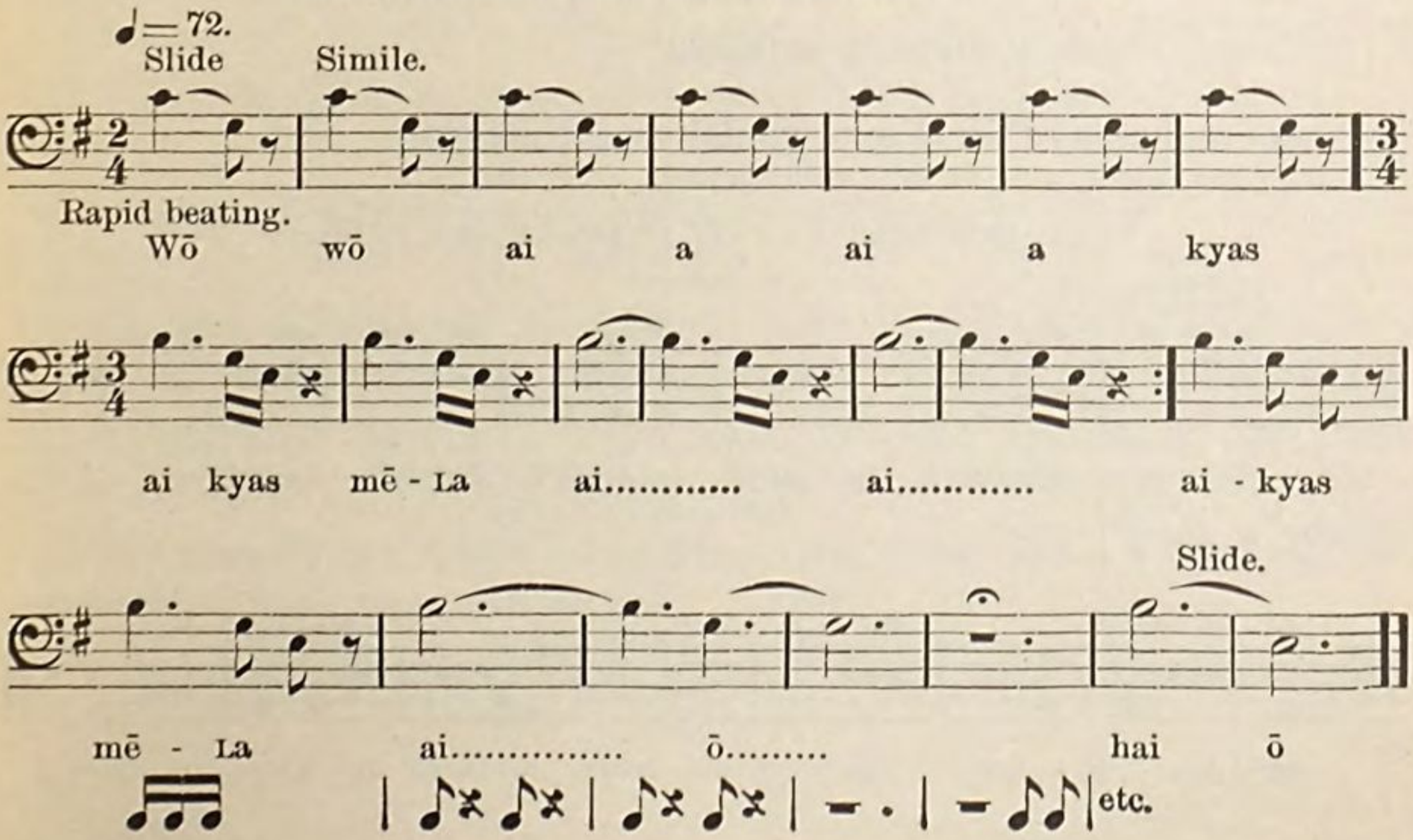
1. Halan wēwä′L'ēqalaiyi, halan wiwäL'ēqalaiyiyē halanvē hala-
My mind is not strong enough my mind is not strong enough hala-
wē′ya.
wē′ya.
2. Halan k·ik·ā′layēyai, halan k·ik·ā′lēqalaiyiyē halanwē halawē′ya.
My mind is afraid of it, my mind is afraid of it halawē′ya.
3. Halan dōxuaLElayēyai halaits'aihahaq'ēnēsia.
I have seen it his winter ceremonial.

TUNE, RECORDED BY J. C. FILLMORE AND F. BOAS.



[To page 512.]

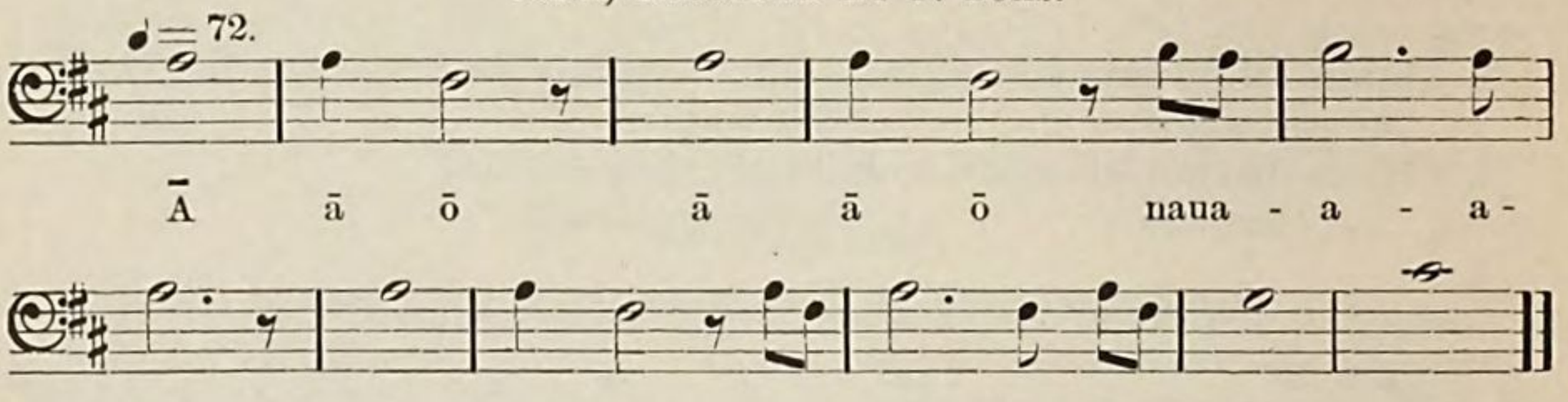
TUNE, RECORDED BY J. C. FILLMORE AND F. BOAS.



[To page 525.]

1 Ā ā nāualā′q, ā ā ā naualā′q hū.
Ā ā magic ā ā ā magic hū.

TUNE, RECORDED BY F. BOAS.



Intervals throughout doubtful.

[To page 527.]

K·Î′NQALALALA SONG.

1. Yiya ham ham ham ham ham ham ham ham ham ham ham ham yiya ha.

Nō′gua ahaik·as haialig·ila q'oā′yag·īLk·as BaxbakuālanuXsi′waē.
I real tamer I say for BaxbakuālanuXsī′waē.

5 2. Yiya ham ham ham ham ham ham ham ham ham ham ham ham ham ham yiya ha.

Nō′gua ahaik·as mā′mutsēg·ila q'oā′yag·īL BaxbakuālanuXsī′waē.
I real pulling (red cedar bark) from his back I say for BaxbakuālanuXsī′waē.

[To page 527.]

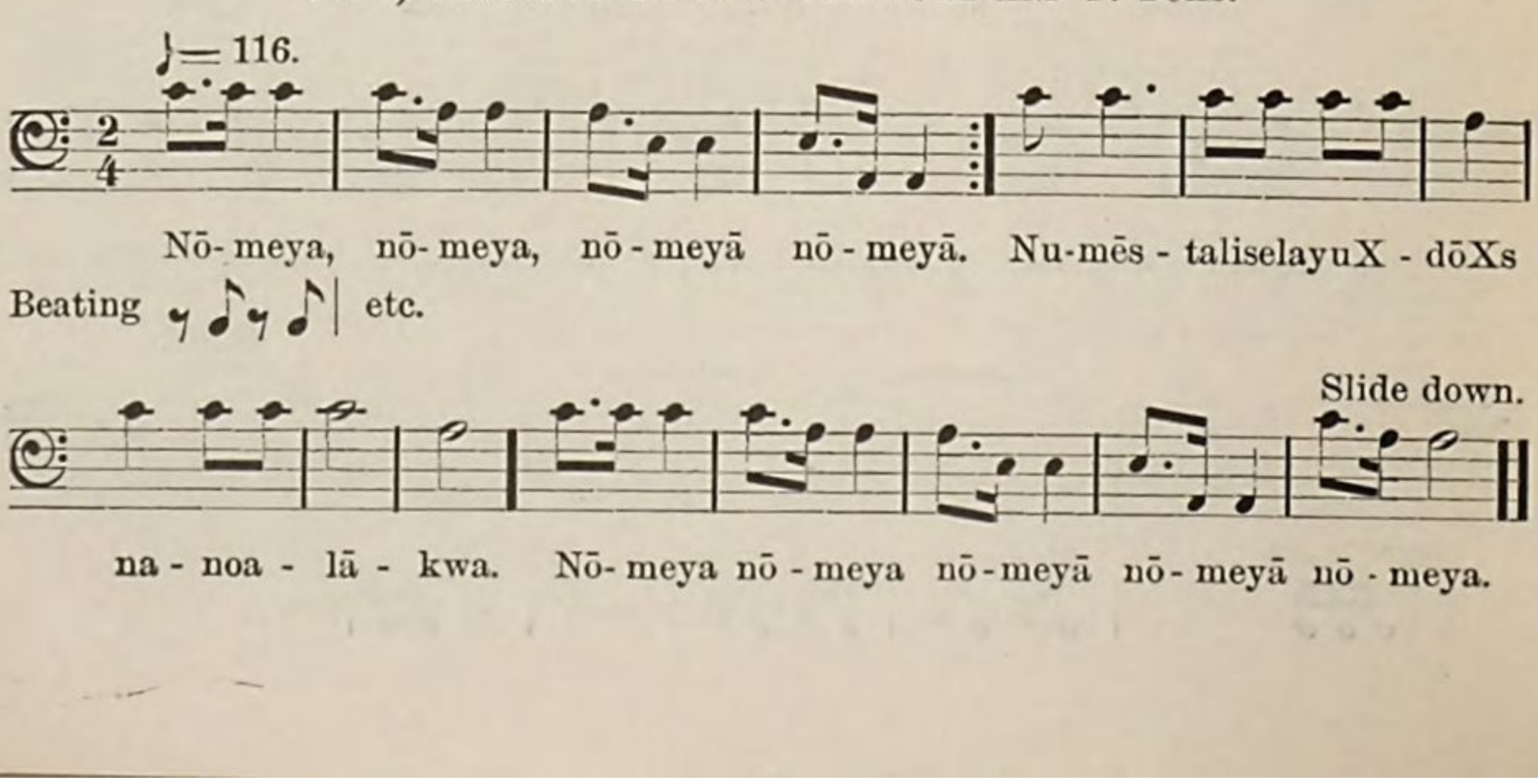
SONG OF THE HĒ′LIG·A.

Hama maiē qā s laix·dēa haialik·imaxalisaiyasōxdōxs Lōkoalag·ī-
Hama maiē for he goes to press down his wildness for you for me superna-
Lawō; hāma.
tural one hāma.

[To page 535.]

10 Nōmeya′ nōmeyā′ nōmeyā′ nōmeyā′.
Old, old, old, old.
NumēstalisElayuXdōXs nā′noalakoa. Nōmeyā′.
Old going all around the world with magician. Old.

TUNE, RECORDED BY J. C. FILLMORE AND F. BOAS.



[To page 538.]

L'Ē'SELAG·I'LA ꞊Ō ALŌ''LĒNÔX.
Mink and wolf.

Lā'wayōguila laē L'ē'sElag·i'la ā'Lēg·aas Qālogwîs g·ō'xdEmsa sa 1
Salmon trap made it is said mink back of Crooked Beach village site of the

Kwā'kiuL. Ts'ē'ts'ēqa laē da nā'Xua qa is g·ā'yimōlas a'mE'nqawakᵘ.
Kwakiutl. Winter dance it is said all of different picked out from each village.

Laam lā'wîs x·isā'Lē LōLaElqamā'yas aLō''lēnôx. Lā'laē mē'iLē da
Then it is said they had disappeared the chief's sons of the wolf. Then it is said doing mischief the

x·isā'Lax Lā'wayôs L'ē'sElag·i'la. Lā'laē yūduxp'EnXoas mē'iLax
those who had disappeared the salmon trap of mink. Then it is said three days they did mischief

Lā'wayôs L'ē'sElag·i'la. Ts'îx·îla laē nâ'qaya s L'ē'sElag·i'la qa ēs 5
the salmon trap of mink. Sick it is said the heart of mink for his

Lā'wayôs mē'iLasEwaē. Lā'laē L'ē'sElag·i'la aā'xsēlax·'it xēs nâ'qaē
salmon trap being done mischief to. Then it is said mink resolved his mind

qa s lē hā'qoalax yā'lē xēs Lā'wayō. Laam lā'wēsēxa la qā'nuL'it.
to go watch what did his salmon weir. Then he went when it grew night.

Wunē'Ems xēs Lā'wayō. G·āx laē hōxwuL'E'lsEla lēda mōkᵘ x·isā'La.
Hiding at his salmon weir. They came it is said they were vomited out of the woods they four who had disappeared.

Hēna'kula am lā'wis lā'xa Lā'wayō. Hē'x·'ida am lāwisē da x·isā'La
They went right up it is said to the salmon weir. At once it is said the who had disappeared

ax'ē'idax xa mELē'ik· mä'ts'ō sa Lā'wayôs L'ē'sElag·i'la. Lā'laē nink·'- 10
took the sockeye salmon gone into trap of the salmon trap of mink. Then it is said he said

ēx'ēdē L'ēsElag·i'la: Sâ'ēL yā'la xEn Lā'wayō; la'ams k·'ē'lax·'iLEq nēn-
to himself mink: You did so to my salmon trap; then you struck with weapon he said

k·'ēx'ēdalat'a L'ē'sElag·i'la â''ma. Lā'laē k'us'E'lsi da LōLaE'lqamāya's
to himself however mink only. Then it is said they sat on the ground the chief's sons of

aLō''lēnôx qa s ha'mx·'idē xa mELē'k·ī k·'ilk·'ā'x·iq. Lā'laē Lā'xulsē
wolf and they ate the sockeye salmon raw. Then it is said he arose

L'ē'sElag·i'la qa s wu'nwix·'idēq qa s k·'ēlax·'idēqēxs mō'kua. Lā'laē
mink to hide in back to club them four. Then it is said

qā'x·'idEq. Wī''laEm laē qā'x·'idEqēxs mō'kua. Lā'laē nē'nakuē L'ē'sE- 15
he cut their heads off. All said it is said he cut their heads off four. Then it is said he went home mink

lag·i'la dāla xa mō'sqEm xawē'qum. K·'ēs qa'aLē's k·'ē'lak·'ēnayā; k·'ēs
taking the four skulls. Not it was known he clubbed them; not

qā'lis abE'mp. Laa'm laē k·ik·î'lnalaLē da aLō''lēnôxoā'xa hai'lōxsāL.
she knew his mother. Then it is said they were going to bring back the wolves at two days hence.

Lā'laē laastōt lāx k·ik·î'lnalaxdEm Lāsa lē'lqolaLaē. Nā'Xua qa s
Then it is said the time came for bringing back these tribes. All to

g·ā'yamōlas. Q'u'liagoadês K'uēkuaxā'waē. K·'ē'samXdē nā'x·'idaxs
from different tribes. Old man was K'uēkuaxā'waē. Not it was daylight

lēx·dês L'ē'sElag·i'la. LEx'ē'it qa s lē lax Mē'mkumlis Lā'wayōguila
he went mink. He started in a canoe for to go to Mē'mkumlis he made salmon trap

lāx. Lā'laē qoā'Lē Lā'wayōguīlas p'aō's laē Lā'wayōs. Lā'laē qā's'idē
there. Then it is said done making salmon weir stone dam it is said his salmon weir. Then it is said he walked

L'ē'sElag·i'la qa s k'oā'g·aālē lā'xa t'ē'sEm. Dō'qoaLa xēs Lā'wayō:
mink to sit on rock on the stone. He looked at his salmon trap:

"Mā'sōs mäts'owēq'ōs Lā'wayōwē?" "Qa'mā'spēts'ā'owēsēk· k'umā'-
"What your fish in your trap salmon trap?" "What little little

pēts'ōk·uX." Lā'laē quL'ē't xēs x·ōms: "Yō'koas'ōEm skun Lā'xu-
bull head." Then it is said he scratched his head: "O, that is pretty I I work

malag·ilisēLEn Lā'Lawāwuxsilag·īLō. Ts'ExstE'nda'xLēlaq^{u}." Lā'laē
hard on the beach looking after the salmon trap for it. Throw it into the water." Then

ē'tsaq^{u}: "Mā'sōs mäts'owēq'ōs Lā'wayowē?" "Qa'mā'spēts'ā'owēsēk.
again: "What your fish in your trap salmon trap?" "What little

p'ā'ēspētsōk^{u}. (*etc. It catches in turn*: ts'E'mqoapēts'ōk^{u}, xu'lqumpēts'ōk^{u},
little flounder. (etc. It catches in turn: little eel, little dogfish,

Lā'mōpēts'ōk^{u}, g·ō'maꞒapēts'ōk^{u}, ts'Ewu'npēts'ōk^{u}, qoā'xnispēts'ōk^{u},
little perch, little silver perch, little cohoes salmon, little dog salmon,

hanō'npēts'ōk^{u}, g·ixoa'pēts'ōk^{u}, sā'tsEmpēts'ōk^{u}, sī'siuLpēts'ōk^{u}. *Then*
little humpback salmon, little steel head salmon, little spring salmon, little sī'siuL. Then

mink says:) "Yū'wis, yū'wis, yū'wis, yū'wis." Aix·'itē nâ'qaēs
mink says:) "That is it, that is it, that is it, that is it." Good was his heart

L'ē'sElag·i'la. Lā'laē k'u'ls'ētax qa s axsEmlē'isē s'a sī'siūL lā'xa
mink. Then it is said he took it out of the trap to put it on the rock the sī'siuL on the

t'ē'sEm. Lā'laē L'ē'sElag·i'la L'Exuī't xa q'oā'x qa t'ā'g·ix tsēs
stone. Then it is said mink broke off the hemlock for layer for his

yā'nEm. Laam nēnpXL laxis g·ō'kuē Qā'logwîs. Lā'laē lāg·a'lis
game. Then he went home to his house Qā'logwîs. Then it is said he went ashore

qa s lō'Ltoē. Koa'lēL am lāwisē abE'mpas. Lā'laē yā'q'eg·ā'Lē
to go out of the canoe She lay down it is said his mother. Then it is said he spoke

L'ē'sElag·i'la: "Qoā'Ltsôs hē qoaē'Lē hā'tsō'qa s laō's qāxs
mink: "Do not stay here grand mother for you go to

x·ix·'ī'ta xEn yā'nEmē'x." Lā'laē abE'mpas lE'nts'ēs. Lā'laē lā'g·ēqElisa
carry in its gills my this game." Then it is said his mother went down to the beach. Then it is said she went alongside

xa Xuā'k'un. Lā'laē wāx· dōx'oaLaxs xa Xuā'k'un. Â'Em
the canoe. Then it is said in vain she looked into canoe the canoe. Only

lāwisē abE'mpas L'ē'sElag·i'la sE'lsEluxs'alis laā'LEqEmāLis x·ō'mstē.
it is said his mother mink became twisted on the beach it turned backward her past head.

Nā'Xua lē'x·'itEns ō'guitaē. Lā'ē dō'x'oaLEla xa sī'siuL. Lā'laē
All it turned over her body. It is said she looked at the sī'siuL. Then it is said

nanō'kulēLē L'ē'sElag·i'la abE'mpaxs xE'nLElaē la qäLa. Lā'laē
he became tired of waiting mink his mother staying too long. Then it is said

Lā'xolēLē L·ēsElag·i'la qa s lē dō'xuidE xēs abE'mp. Lā'laē dō'x'ua- 1
he arose from the floor — mink — to — go — look for — his — mother. — Then it is said — he be-

LEla xēs abE'mpaxs âmaē sE'lsEluxs'alis. "A ha ha ha ha," nē'x·lat'a
held — his — mother — only — twisted — on the beach. — "A ha ha ha ha," — said however

L'ē'sElag·i'la dā'LEla sēs abE'mp. "Ꝺoā'yādE's hā'ts'awê. Â'Em
mink — laughing — at his — mother. — "Just so — grand mother. — Only

mō'mElq'ō." Â'Em lawisē L'ē'sElag·i'la dā'x·'it xēs abE'mp qa s
you are too glad." — Only — it is said — mink — took — his — mother — to

nā'qamē'stEndēx ȣoē'LȣoēlEs xa lā'xdē sE'lqoamēsta. Hai'Em lāwisē 5
set them aright — her limbs — the — there — twisted around. — He — it is said

L'ē'sElag·i'la qāXsāla xa sī'siūL; la lō'stits. Lā'laē k·'êqayî'ntsēs
mink — carried at gills — the — sī'siuL; — he went up from the beach — Then it is said — he put it on a box

yā'nEm lāxa xatsE'm. Laa'm laē tsā'qua.
the game — on the — box. — Then — it is said — it became evening.

Laam laē kuē'xala Lē da k·ik·î'lnElaLaxa laxa ȣā'nuL. Laa'm laē
Then — it is said — they beat time — they were going to — the — k·ik·î'lnala — at the — night. — Then — it is said

kuē'xalē da k·ik·î'lnala qa ēda lē'LaL Lē'La'la k·'ē'lag·uxs L'ēsElag·i'la.
they beat time — the — k·ik·î'lnala — for the — expected in vain — the dead ones — killed by — mink.

"La'mEns hēnax'alēLai' pēpaxalai' LElē'LaalaL xEns q'ā'laLla." 10
"We — will try in house to bring back — shamans — calling with music — our — ts'ā'eqa novices."

Lā'laē da nEmō'kuē L'ā'yu'tsāqoa: "LamEns wuLāxōLai' pēpaxalai'
Then it is said — the — one — replied: — "We — will beat the boards in vain — shamans

k·îlnElaL xEns q'ā'laLla." Lā'laē da nEmō'kuē L'ā'yutsāqoa: "LaEms
bringing back — our — ts'ā'eqa novices." — Then it is said — the — one — replied: — "You

xōsit'ēLai' nēnEmōkoai'!" Lā'laē yā'q'ēg·aLē da a'lxLaē: "Lā'Las
wash yourselves — friends!" — Then it is said — spoke — the — last: — "You will

nānElqEmlēLōLai' yayilāmēXoai'; nānEmtsâEmLEnsai'."
face the rear of the house — uninitiated ones; — we will go in before dark."

Laa'm laē nōLq'ālag·ilîLē da k·ik·î'lnElaxs k·'ēâsdēxmaē wuLā'x'a- 15
Then — it is said — they gave it up in the house — the — k·ik·î'lnala — not there — they heard

LElē da hō'Laq'Esa xēs sēsnātalag·iliL. "Mā'tsEns g·īqamayaEns
it — the — listeners — theirs — what they were trying to obtain. — "What our — chief our

g·ā'xtsôg·ax·ī' K·ē'x·a." Laa'm lawîs qā's'ētsa'wa. Laa'm lāwîs ȣoā'LĒ
let him come — K·ēx·." — Then — it is said — they went after him. — Then — it is said — done

k'uē'xayas K·ē'x·i LEwīs nāLnEmuōt yix mā'yusustâlag·ilakᵘ ꝶō mā'xayō
what he invented — K·ēx· — and his — cousins — that — raccoon — and — killer whale

ꝶō tamē'nas. Hä'imîs woq'oā'sē Ts'Estā'yuqoa. Lā'lae mā'yusustâlag·i-
and — squirrel. — She — his sister — Ts'Estā'yuqoa. — Then it is said — raccoon

lakᵘ qā's'it qa s lē k·'uxsōtax ō'nōtsExstayā sa kuē'xalatsē. K'ustō'dē 20
went — that he went — pulled out (board) — in the rear corner of the house — dancing house. — They sat in the hole

mā'yusustâlag·ilakᵘ ꝶō tamē'nas lā'xa k·'uxsEwākᵘ. G·āx laē K·ēx·
raccoon — and — squirrel — at the — board pulled out. — He came it is said — K·ēx·

1 yix'uī't nEmā'L'ētbedō lāt'a yix'uī't lāai Xuē'laqawuls. G·ā'x laē
he danced a short time however he danced it is said he went out. He came it is said

ēidiLē K·ēx· qa s yix'uī'dēE. Yix'uēmēLtsōsēs wī'waq'oa:
again into the house K·ēx· to dance. He danced with them his sisters:

Qa'qaxaLā'la Ts'Estā'yōquē.
Spread your legs Ts'Estā'yōqua.

Lā'laē Xuē'laqawulsē K·ēx·. G·ā'xlaē Xuē'laqēLē K·ēx·. Laa'm
Then it is said he went out K·ēx·. He came it is said he went into the house K·ēx·. Then

5 laē q'oalā'LaLa xēs yixu'mL. Yixu'mLādês x·ō'msas LŌ'LaElqamēx·dês
it is said he hid his mask. His mask the heads of the chief's sons

aLō''lēnôx. Lā'laē q'a'mt'ētsōs sa q'E'mtEmēX:
of the wolves. Then it is said they sang his song:

Qapamā'lō K·ēx·āxō LōLaE'lqamēx·dēxs aLō''lēnôx.
Put on head K·ēx· the eldest sons past of the wolves.

Lā'laē lāwuls g·ā'xlaē ē'itêt. Lā'laē qôlx·īdux sa xawēq. Lā'laē wax·
Then it is said he went out he came it is said again. Then it is said they hung on his body the skulls. Then it is said they tried

k·'ē'lax·'itsō sis g·ō'kulōt. Laē dō'x'uaLELExs hēimaā'xōL hē'ikulāx
to kill him his tribes. Then they discovered he it was he had done it

10 LŌ'LaElqamē s aLō''lēnôx. Laam lā'Xsō lā'xa t'E'nâyi laē. TE'm'yālē
the chief's sons of wolves. Then he went through at the door in the rear it is said. They made sounds

tamē'nas ⊤ōwîs nEmō'kuē mā'yusustâlag·ilak[u]. G·āx'am ē'idēL tsēs
squirrel and his friend raccoon. He brought again into the house his

sī'siuL, laa'm yixumā'la xa sī'siuL. G·î'l'Em lawis nēLEmx·'it lā'xoa
sī'siuL, then his mask the sī'siuL. First it is said he showed his face at the

t'Ex·i'la lā''aslō't'ēt xēs yixu'mL. Â'Em lawis g·ō'kulōtas sE'lsElxs'alēL,
door then he uncovered his mask. Only it is said his tribe became twisted,

laē dō'xoaL Lēs yixu'mL. Lā'laē K·ēx· dā'dōqawa xēs nā'Xua LēLE-
then they saw his mask. Then it is said K·ēx· selected his all his rela-

15 Lâla ⊤a'wēs Lā'xula lā'xa nā'Xua bEguā'nEm qa s q'u'lax·'itamasē.
tives and his liked among the all men to make them alive.

Laam lā'pa.
That is the end.

[To page 610.]

KOSKIMO DIALECT.

X·ētsax·ōstōwaya x·ētsax·ōstōwaya Lawu'lqamaya Lawu'lqamayas
Look up to the world look up to the world chief's son chief's son

Q'ō'misila Q'ō'misila.
rich maker rich maker.

[To page 612.]

LA'LASIQOALA DIALECT.

Hayasâ hōnô lalä'ya honô hanä häu.
20 Hayasâ hōnô laläya honô hanä häu.
QoaL qoā'sayak·'ēsLas wiā'laL.
Do not cry you will return safely.

[To page 614.]

LA'LASIQOALA DIALECT.

Ha ha lāg·anEmLē hā'yalalaqôla mā'lats'Es mā'mLēaxtōwē ha ha ha. 1
Ha ha — you do not give me — a good answer — wash tub — you who bring the southeast wind — ha ha ha.

[To page 615.]

SONG OF ME'LXMEKUS.—LA'LASIQOALA DIALECT.

Hau'LēlalisLōL q'ā'yusqEmayā'ita.
I will listen to you — having the old tale attached to it.

Hau'LēlalisLōL anōguadenōXslaēda.
I will listen to you — what belongs to us.

[To page 630.]

SONG OF THE DEER.

1. Wā'xalaLEns xā'LaLxa qē'watsēa g·ā'xtsēk·as g·îlig·a'lisa g·îlk·E-
We say wa — driving away by noise — the great deer — coming great real — standing on forelegs — standing

yā'lisa hā'maLElīsa lē'lqoalaLē, qē'watsē nā'nōlēnēk·as lē'lqoalaLē wê. 5
on forelegs over the whole world — covering — the tribes, — great deer — said to be fool real — tribes — wê.

2. Ha aix·LeLā'lants L'ā'yēmēista lE'mxumēista g·aEns la'aiLêx.
Ha — we shall be — thin faced — dry in mouth — we — shall go

au'tsaqālisa da'oxqonēisLa x·äits'ak·inēisLa qē'watsē nā'nōlēnēk·as
cause him bad luck — staring at him — getting sleepy by watching him — the great deer — said to be foolish real

lē'lqoalaLē wê.
tribes — wê.

3. Ha aix·tElalē ai'g·iLmalag·ilēisa g·ā'laix·dē q·'u'qalag·ilēisa
He — shall be — made good all around — first — lighting suddenly

g·ā'laixdē pE'nqalag·ilēisa wī'lak·'inēg·ilēisa Lā'qoak·'inēg·ilēisa. 10
first — glare all around — highness on his body — copper on his body.

Sā'yaxoa wuLE'mnō'guas häiyä'ik·ila a'm'äik·ila hai'mōsEla wu'Lōdā-
Pure — antlers having his — unbroken — not cracked — that is — antlers taken

lag·ilēitsōs äi'yalqunxēlîs lē'lqoalaLē. Hā, wai'g·a x·ins xā'Layaqa,
off everywhere — speakers of — tribes. — Ha, — let — us — drive him away,

wai'g·a dā'daxulētsE'mnōxLas dā'xoaxsālētsE'mnōxLas ts'ē'tsēLwāla-
let him — try to jump as far as possible — jumping over the highest one — famous all

gilēistēis lē'lqoalaLē, qē'watsē nā'nolēnēik·ōs lē'lqoalaLē wê.
around — tribes, — great deer — said to be foolish — tribes — wê.

[To page 631.]

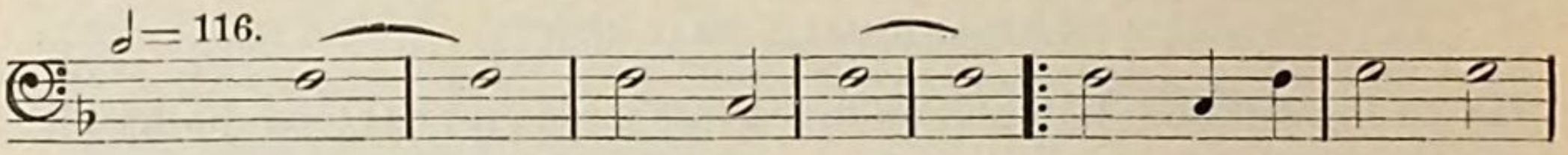
SONG OF NŌ'MAS.—LA'LASIQOALA DIALECT.

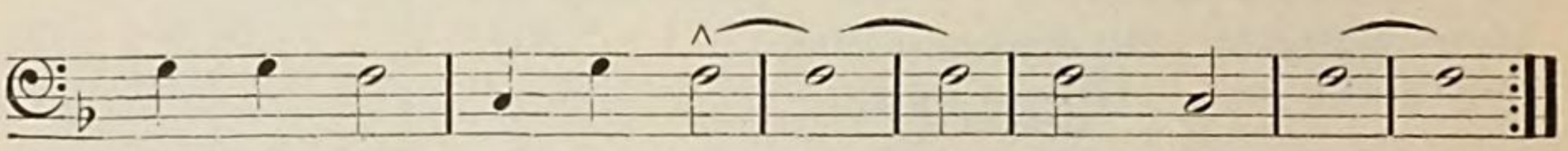
1. Aix·'amLts hēilisLōL nōmasâ'. 15
Good you — made right — old man.

2. Qais k'uē'latsēnēLōs nōmasâ'.
For you — will give a feast — old man.

3. Qais t'ēqoap'ēnēLos nōmasâ'.
For you — make a fire with stones in it — old man.

TUNE, RECORDED BY F. BOAS.





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SONG OF AYI'LKOA.

1 Ohōya hōya hōya hā, hōya hōya ha, hōya ho hya uho ho.

1. AōyaLalax g·ins yayax·āp'aēisēik· lax lō'wa.
Slowly we race against each other in world.
on ground

2. AōyaLalax g·îns qā'qasap'ēL g·ins lax lō'wa.
Slowly we walk racing we in world.

3. Ha, nō'guam anx'anqoā'mas g·în g·ā'yuLē lax guā'paalē'tsēs
Ha, I am the one who makes I come to you from the north end of the
clouds

5 lō'wa.
world.

4. Ha, nō'guam p'E'lxp'Elxāmas g·în g·ā'yuLēX lax guā'paalē'tsēs
Ha, I am the one who makes I come to you from the north end of the
the fogs

lō'wa.
world.

5. Ha, nō'guam L'ēxL'ēxā'mas g·în g·ā'yuLēX lax Lā'qoag·ilak·as
Ha, I am the one who makes the I come to you from the copper maker real
sky red in the morning

ōwa.
good.

10 6. Ha, nō'guam ts'E'lxts'Elqoā'mas g·în g·ā'yuLē g·în lax aix·ts'um-
Ha, I am the one who makes it warm I come to you I from the bright

g·ilak·as ōwa.
maker real good.

7. Ha, lā'mla laē ā'daxEnēsElaLēs Lawu'lqamēLōs amia'xalasōts'ēsa.
Ha, and then he will perform the Tongass dance your chief's son. the one whom we praise.

[To page 631.]

SONG OF THE KILLER WHALE.—HĒILTSUQ DIALECT.

Amiaxalalaqai ha'lx'ainōxkuas'ōqai LĀ'LtsīstaiLElakuas'ō lāxs g·ō'-
Praise the killer whale coming up in the house real in the good

kwasōwawusqai hē'mask·as.
house the chief real.

[To page 631.]

SONG OF THE RAVEN.

Qaqā′m. Qaqau qaqau, qaqau, qaqau, qaqā′ qaqau. 1
Q'anē′staisElag·ilaisk·as'ō qōwik·as'ō.
Soaring around real raven real.
Yā′yaqayalaēnôxqoasō qōwik·as'ō.
Knowing to obtain wealth raven real.

[To page 631.]

SECRET SONG.

Ya'mEnē′X ōguä′yiyaha, ya'mEnēX ōguä′yiyaha.
O you small ones poor ones O you small ones poor ones.
Hailoqoa′mEnēX ōguä′yiyaha, hailoqoa′mEnēX ōguä′yiyaha. 5
Speakers small ones to me, speakers small ones to me.

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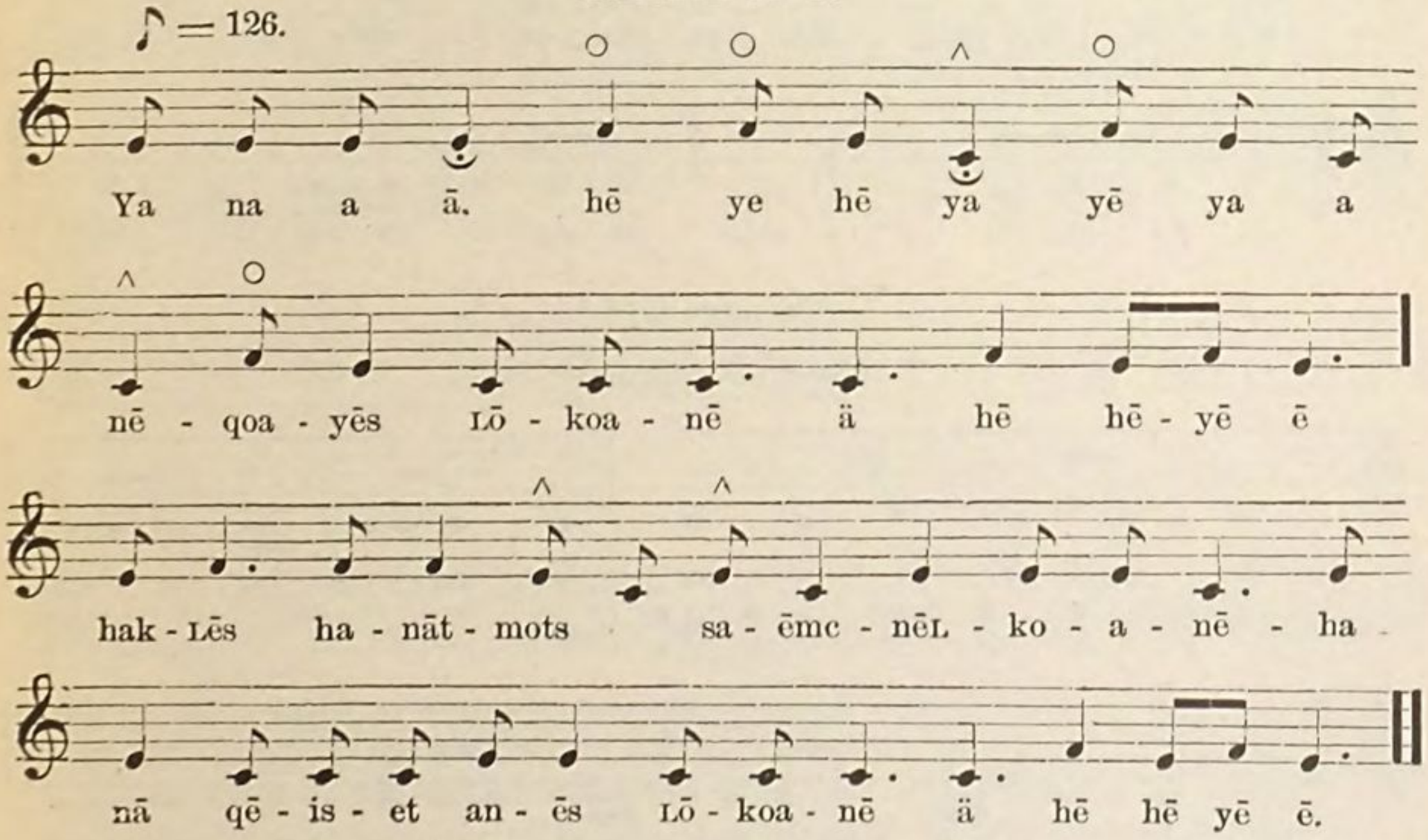
LŌKOALA SONG.



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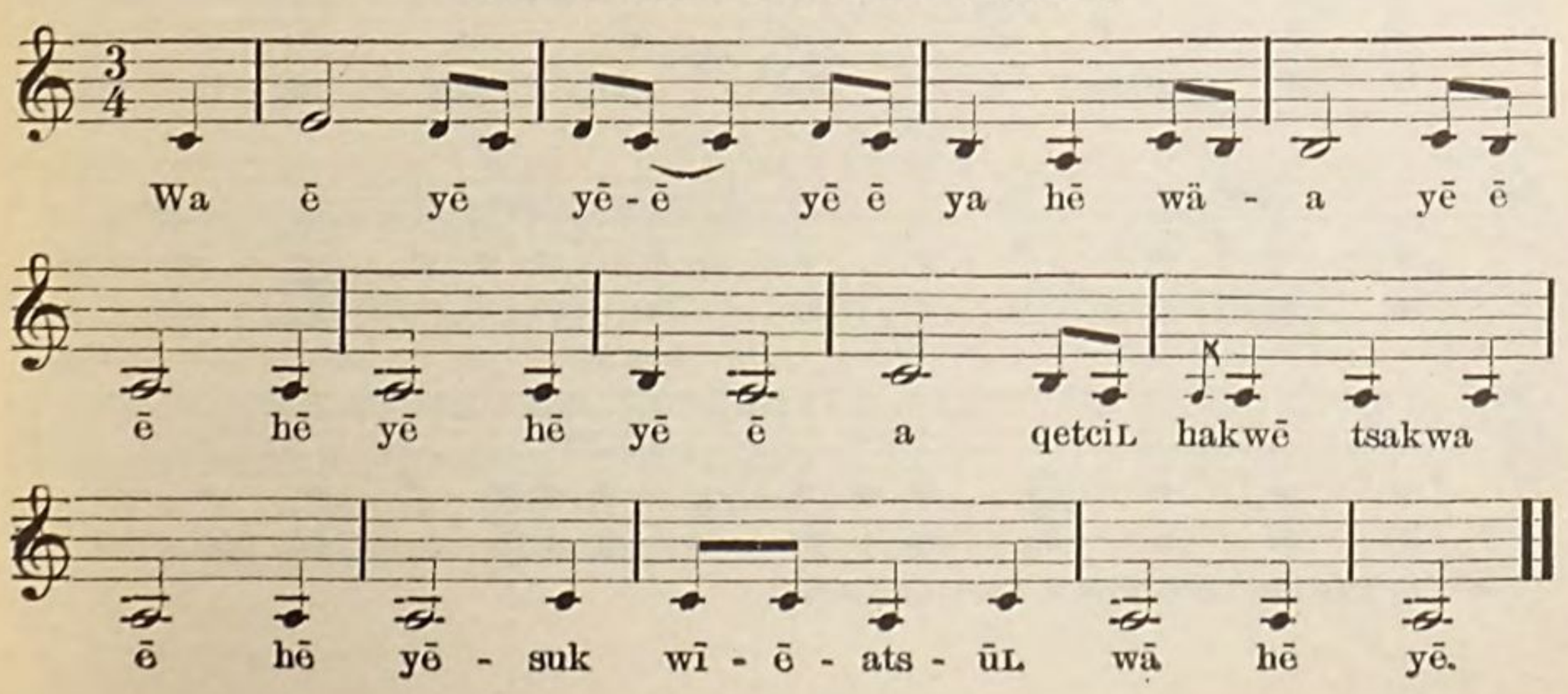
SONG OF THE NUTCĀ′LATH SOCIETY.



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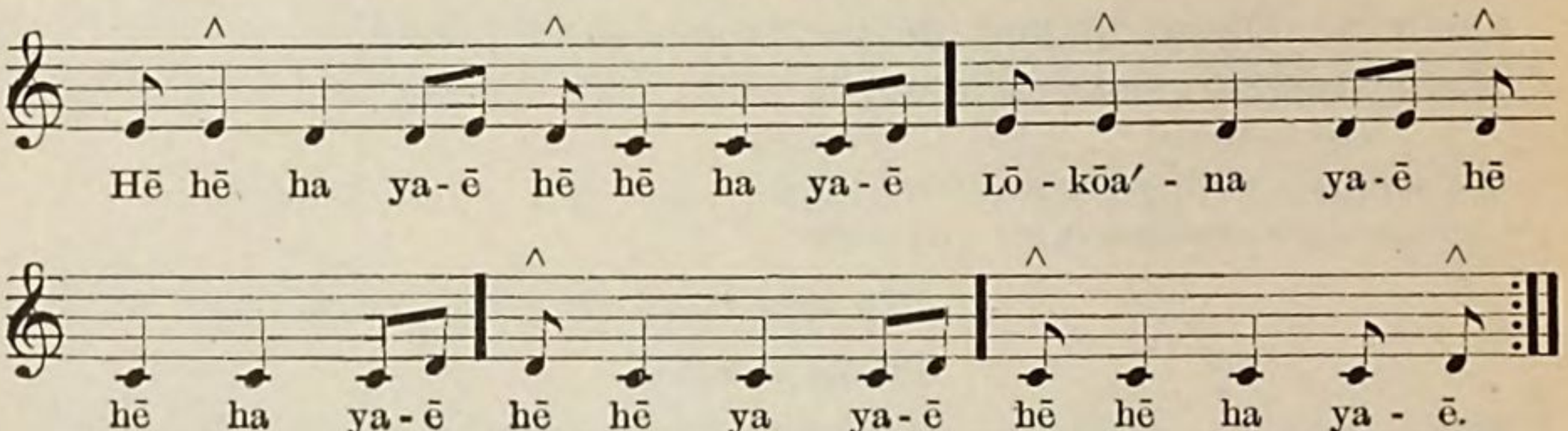
SONG OF THE MÖ′TCLATH SOCIETY.



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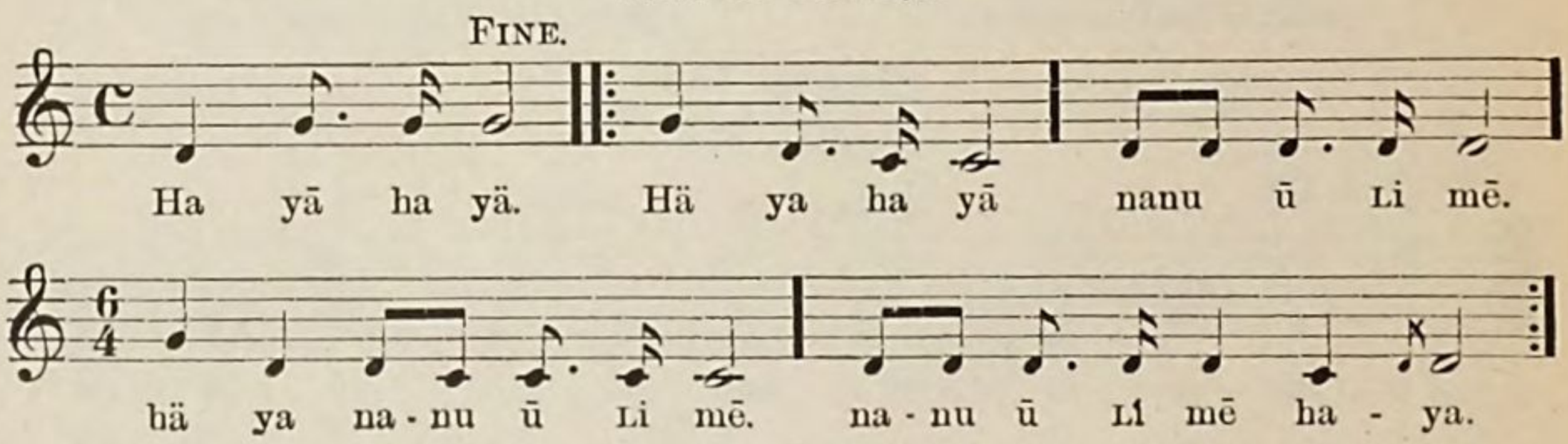
SONG OF AAI′LQĒ.



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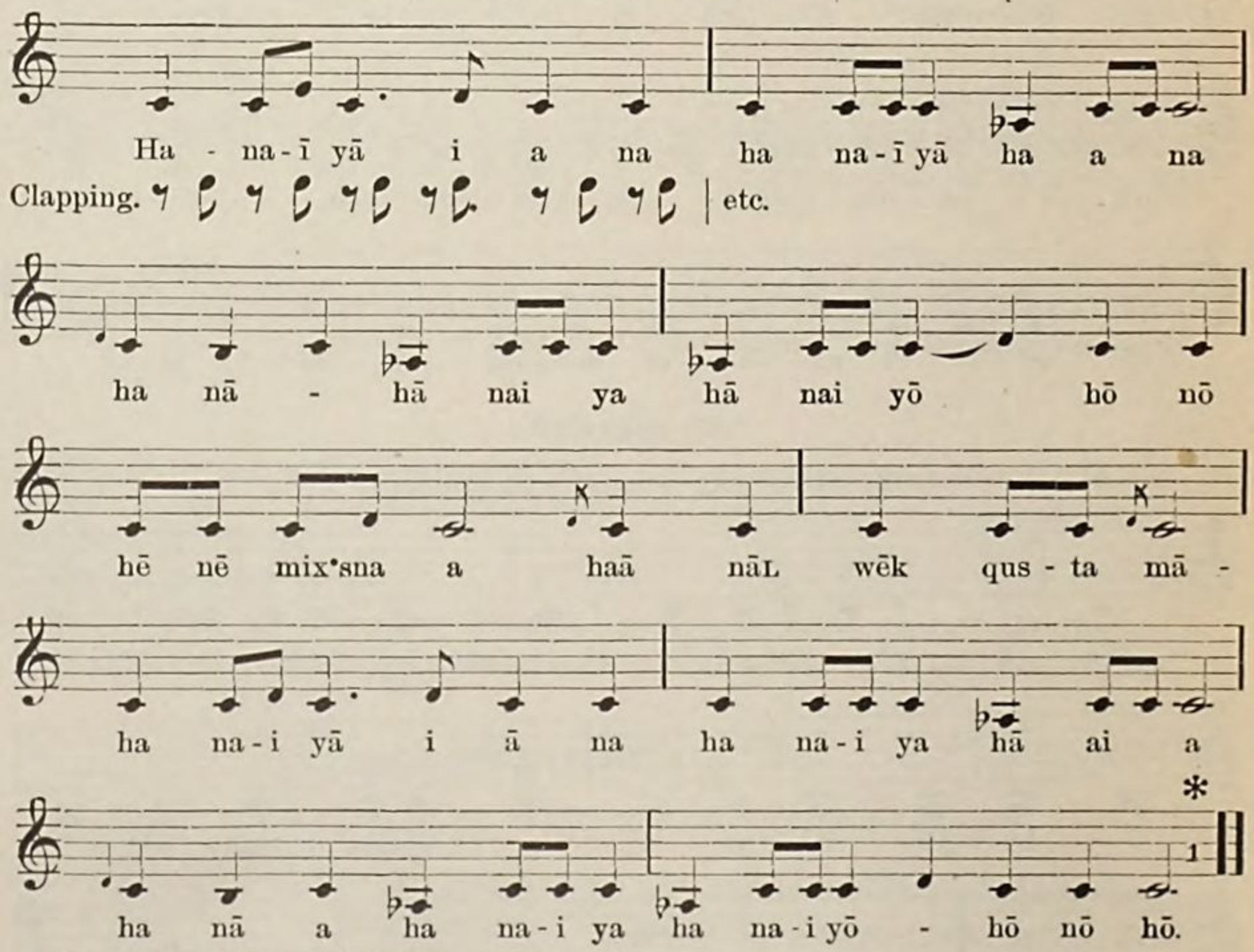
SONG OF HÎNEMIX'.



✱ (1) The last note drawn down one eight.

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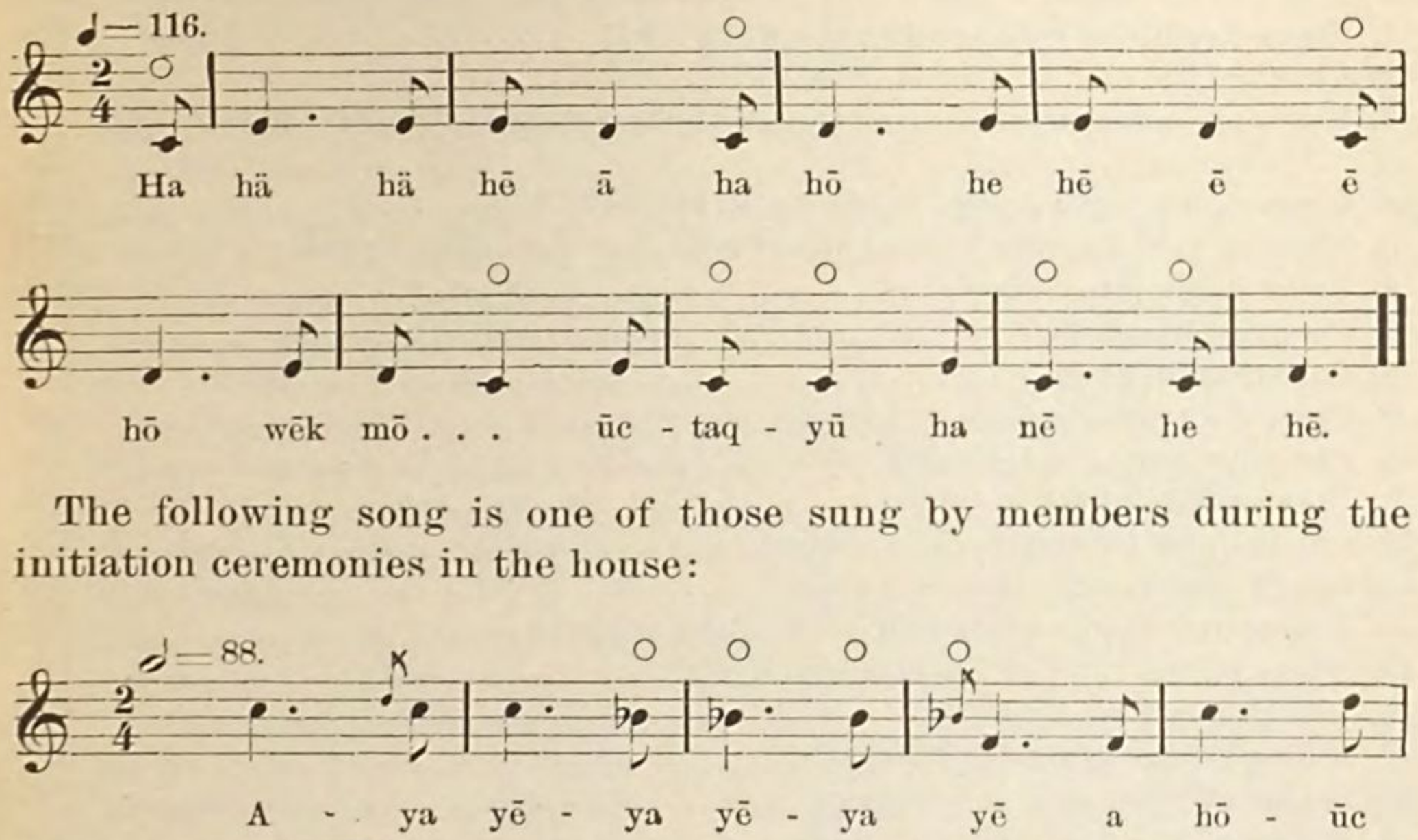
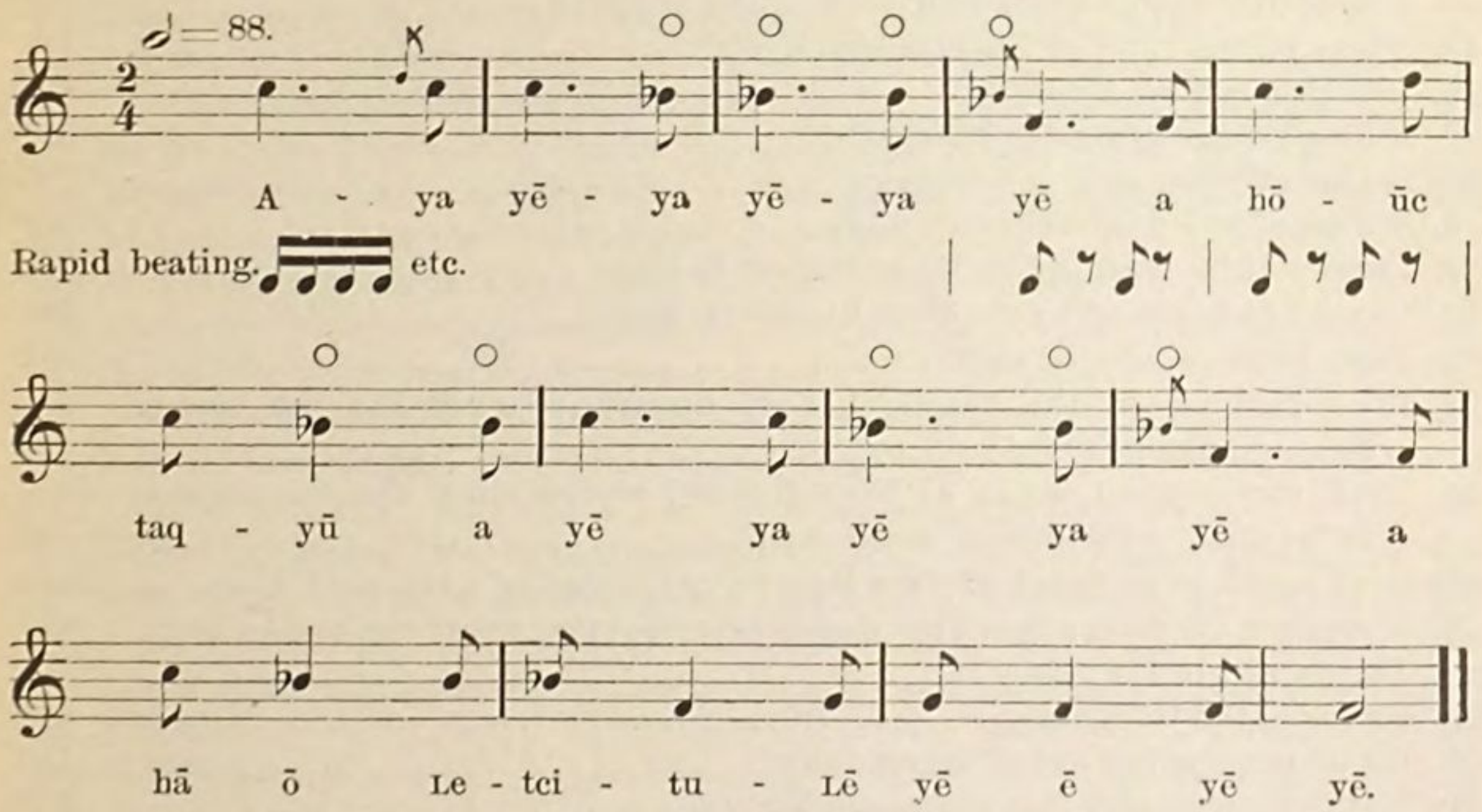
SONG OF TS'Ā'YĒQ.



The following song is one of those sung by members during the initiation ceremonies in the house:



This song is repeated *ad infinitum;* in the repetitions quarters are beaten right through. The dancer jumps at the end of each quarter from one foot to the other. At each jump he lifts one hand and extends the other downward and backward.

[To page 656.]

SONG OF SLEEP.

Aiwôl wôxkuā′, aiwôl wôxkuā′.
Oh how sleepy we are! oh how sleepy we are!
Adē gugō′ēt nōl g·amkᵘ al ts'Em laxha′ ya! Lag·îx· txaldā′ul
Whenever strikes me the heat of heaven ya! again comes
dEm wôx qa s nêkc Em wôx, kua!
(future) sleep to the husband of sleep, kua!
Aiwôl wôxkuā′, aiwôl wôxkuā′!
Oh how sleepy we are! oh how sleepy we are!

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THE GRAPHIC ART OF THE ESKIMOS.

BASED UPON THE COLLECTIONS IN THE NATIONAL MUSEUM.

BY

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THE GRAPHIC ART OF THE ESKIMOS.

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INTRODUCTION.

In the selection of appropriate materials upon which to inscribe his thoughts, primitive man was governed to a great extent by his environment.

In a country abounding in rocks and cliffs, it was but natural for him to portray upon a smooth conspicuous surface the record of an exploit, or a character to direct his companions on the right trail or to a convenient camping place. In that portion of the West known as the "Great Plains," rock pictures are of seldom occurrence. The numerous tribes of many different languages were hunters of the buffalo, and in their frequent movements from place to place found the skin of that animal, as well as that of the deer, the most convenient. Along the shores of the Great Lakes, where the white birch is of frequent occurrence, the Indians employ the bark of this tree for their mnemonic and other records. The bark, when fresh, is tough, and retains permanently the slightest markings indented or incised upon it by means of a sharply pointed bone or nail.

Various Indian tribes employ, also, other substances, such as bone, wood, and various arrangements of shell beads, as well as feathers and textile substances, to convey special forms of information.[1]

The Innuit or Eskimo of Alaska utilize the tusks of the walrus, and in occasional instances the horns of the reindeer. The tusks are cut longitudinally into rods, upon the faces of which delicate engravings or etchings are made, the depressions or incisions thus produced being filled with black or some other color so as to heighten the effect.

The Eskimo of Greenland, Labrador, and the remaining portions of the Arctic regions east of the delta of the Mackenzie River, use flat pieces of wood upon which to exercise their more primitive skill at art ornamentation. Although ivory is abundant in some portions of the Melville Peninsula, yet it appears generally absent in the collections from that region.

[1] For details and history of pictography, see the writer's "Beginnings of Writing." D. Appleton & Co., New York, 1895.

While the accompanying paper is based chiefly upon the collection in the United States National Museum, quite a number of valuable data were found in the interesting collection of ivory records in the museum of the Alaska Commercial Company in San Francisco, California.

In addition to these two sources of information, the writer was so fortunate as to have the services in San Francisco of a native Alaskan half-caste, who had for a number of years been in the employ of the Commercial Company. This man had spent most of his life in traveling among the various settlements of southern Alaska, chiefly for the purpose of securing furs and peltries in exchange for goods desired by the natives. Vladimir Naomoff, in addition to his thorough familiarity with the Russian and English language, was fluent in five or six native dialects. His keen observation of the habits of the people of the mainland, and their various methods of conveying information by recording on different materials their thoughts, enabled him to interpret with ease the numerous records in the museum referred to; and he also prepared a number of sketches in imitation of records which he had observed, and which he had been instructed to prepare and deposit at habitations at which he had called during the absence of the regular occupants or owners.

The primary studies relating to the subject of the interpretation of pictographs were begun by the writer in 1871; and but limited progress was made until the year 1879, when the Bureau of Ethnology was organized and furnished the facility necessary to officially conduct investigations among the various Indian tribes of the United States and British Columbia, and to visit nearly all known pictographs and petroglyphs in order to make personal investigations, comparisons, and to secure tracings and sketches thereof.

In addition to these researches in pictography, the gesture language of the various tribes was also studied, the latter frequently aiding very materially in interpreting obscure characters, and attempts at the graphic portrayal of gestures and subjective ideas.[1]

The collection of gesture signs obtained from Vladimir Naomoff, and subsequently verified, to a great extent, by a Mahlemut native from St. Michael's, is appended hereto,[2] in connection with the list of objects in the National Museum, to which special reference is made.

These gesture signs are of importance in the study and interpretation of many of the Eskimo records.

Many of these gesture signs are natural, and intelligible to most people who are known, on account of peculiar linguistic position, to have knowledge of this mode of communication because of their

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[1] For names and number of tribes visited, see Salishan Bibliography. J. C. Pilling. Washington, D. C. [Bulletin of the Bureau of Ethnology] under caption *Hoffman, W. J.*

[2] Collected by the writer in 1882, and deposited in the manuscript collections of the Bureau of Ethnology.

inability to comprehend the oral speech of surrounding tribes. Other gestures were peculiar to these natives because of the unique resources of their peculiar environment; and others again were highly interesting because of the concept being hidden in some old custom, shamanistic ceremonial, or individual practice of the person having recourse to a particular idea.

In a number of the records will be observed outlines of the human figure, with hands and arms, and sometimes the lower extremities, in curious and apparently unnatural positions. Such portrayals are attempts at illustrating gesture signs pictorially, and subjective ideas are thus indicated—a step very much in advance of the ordinary system of pictography as known to and practiced by most of the Indian tribes.

It is obvious, therefore, that in order to fully comprehend the intention of a pictographic record, it is necessary to know the artist's needs, his environment and resources, his beliefs and shamanistic observances, and as much of the gesture language as may be obtainable.

From a careful study of the pictographs of the several Indian tribes and the numerous petroglyphs and painted records scattered over various portions of the United States, it is safe to assert that a comparison of these with the various artistic materials of the Eskimo show the latter to be vastly superior to the preceding, especially in faithful reproduction of animal forms and delicacy of artistic execution.

The portrayal of the reindeer, in particular, serves as an illustration of the manner in which the Eskimo are close observers as to anatomical peculiarities, as well as in catching the expression indicated in various attitudes assumed by these animals in grazing, rising, running, and in the positions assumed to denote alarm, fear, etc.

In the portrayal of whales the Eskimo artist is also careful as to specific anatomical features. The peculiar elevation at the spout or blowhole of the "bowhead" is especially indicated, and is characteristic of the species, as that part of the mammal is used to raise and keep open the elastic "granular" salt ice for breathing holes or for spouting.

The smaller whale, designated also as the California gray, the "mussel digger," or "devilfish," is likewise specifically indicated by a more pointed head and sharp flukes, and I can only call attention to the sharp flukes and conspicuous fins of the "killer" to illustrate the result of observation given to it by the native artist in endeavoring to show graphically the part which, to him, is a specific identification of the animal.

In a few illustrations the walrus is very carefully engraved, and although the native result may appear uncouth and cumbersome, yet a comparison of the etchings with the illustration of that animal will at once serve to show strikingly careful imitation of the original subject. As to the portrayal of various other animal forms, they are, generally,

sufficiently true to nature to admit of ready identification. The imitation of the specific construction of the kaiak and the umiak is usually excellent, as also the various forms of dog sledges peculiar to certain localities in Alaska and faithfully represented in a number of etchings. For the purpose of further comparison between the Eskimo portrayal and the manufactured vehicle, several illustrations of the latter are reproduced in figures.

The Eskimo is not an expert in portraying the human form. It is certain that in various instances man is indicated by linear outlines or incisions very much in imitation of that of the Shoshonian tribes, the head being a mere circular spot, from which is suspended a line terminating below in two legs, and beneath the head being attached two lateral lines for arms. These extremities may be drawn in various attitudes, but apart from the attitude no further notice would be given to them. This forms a marked contrast as compared with the same idea as portrayed by various Algonkian tribes, notably so the Ojibwa, who devote much artistic attention to the head, dress, and ornaments of the character intended to represent a human being.

The peculiarity of Eskimo graphic art as compared with that of other peoples will be treated of farther on. The subject forms the basis of the present paper, and was made possible through the courtesy of Doctor G. Brown Goode, Director in charge of the United States National Museum, and my indebtedness to Professor O. T. Mason, Curator of Ethnology, is hereby gratefully acknowledged for his valuable suggestions and for placing at my disposal every facility for the careful examination of specimens in his custody, not all of which, however, were deemed of sufficient importance to illustrate, as such a procedure would have resulted in considerable duplication.

THE ESKIMO.

GEOGRAPHIC DISTRIBUTION.

The Eskimauan, or Innuit,[1] linguistic family occupies the greater portion of the coast of Arctic America, Greenland, the Aleutian Islands, and a small area of the Chukche Peninsula of Siberia. The extreme points are about 3,200 miles apart, though to follow the shores would necessitate a journey of 5,000 miles.

The interior portions of the continent are occupied by various Indian tribes, belonging to several conspicuous linguistic families, but the Eskimo, under various designations, have always apparently confined themselves to the seashore and the country adjacent thereto, not exceeding 50 miles inland, except in following various river courses in pursuit of game.

The easternmost branch of the Eskimo is that represented by natives

[1] Although the term Innuit is frequently employed, and may be linguistically proper, the writer employs the more popular term, viz: Eskimo.

along the north and east coast of Greenland, two families being met with by Captain Clavering in 1823, north of 74° 30′. Captain Holm recently found them on the southeast coast between 65° and 66° north latitude. These are said to profess ignorance of any natives north of them. On the west coast of Greenland they extend to about 74° north latitude. General Greely found indications of permanent settlements in Grinnell Land, near Fort Conger, at 81° 44′ north latitude.

Mr. Henry G. Bryant, in his "Notes on the most northern Eskimos,"[1] says:

As is well known, the most northern Eskimos were first visited by Sir John Ross in 1818, and he first applied to them the term "Arctic Highlanders." As the appropriateness of this appellation seems quite questionable as applied to a tribe living wholly on the seacoast, I have preferred to use the term "most northern Eskimos," as being more descriptive and appropriate in its character. This tribe inhabits that rugged strip of indented coast in northwest Greenland which extends for about 550 miles from Cape York to a point somewhat south of the southern edge of the Humboldt glacier. It is a fact well known that the impassible ice walls which occur at both of these points have thus far served as effectual barriers to any extended migrations of this tribe. It is owing to this enforced isolation that at this late day we find here the most typical of the Eskimo family groups—a primitive tribe who are but just emerging from the Stone Age, whose members still dress in skins, eat raw flesh, and pursue their game with the same sort of rude weapons that their forefathers used in prehistoric times.

Doctor Kane, in 1855, noted this tribe as numbering 140, while Mr. Bryant remarks that Lieutenant Peary places the census at fully 250.

On the Labrador Coast the Eskimo extend southward to Hamilton Inlet at about 55° 30′, north latitude, though it is not so long since they were located at the Straits of Belle Isle.

On the east coast of Hudson Bay these natives reach southward to James Bay; while northward it is on Ellsmere Land and around Jones Sound that Doctors Boas and Bessels place the northernmost groups of the middle Eskimo. Several of the northern Arctic islands present evidence of former occupancy, but for some unknown cause the natives migrated thence. The western part of the central region of the continent seems unoccupied, and from the Mackenzie westward the coast seems to have no permanent villages between Herschel Island and Point Barrow. This strip of country is no doubt hunted over in summer, as the natives of the latter locality do not penetrate far into the interior for game.

The Alaskan Coast from Point Barrow to the Copper River on the south is practically occupied by Eskimo of various villages or bands, as will hereafter be more fully described.

The Aleutian Islands are occupied to a certain extent by a branch of the same linguistic family, though the dialects are unintelligible to the Eskimo proper. Their distribution has been very materially

[1] Reprinted from Report of the Sixth International Geographical Congress, held at London, 1895, p. 3.

changed since the advent of the Russians and the establishment of the fur trade, and at present they are located principally on a few of the largest islands only.

On the Asiatic side this family is represented by the Yúit, who are distinct from the Chukche, or Túski of authors, who are of Asiatic origin, and of a distinct linguistic group. The Yúit are also a coast people, and, according to Mr. Dall, are comparatively recent arrivals from the American side. Between the Siberian and the Alaskan coasts are the Diomede Islands, a convenient stopping place for voyagers between the two continental points above mentioned. At these islands Simeon Déshneff, in 1648, found natives wearing labrets who were at war with the Túski. Similar reports were made by Shestakoff, in 1730. Peter Popoff, who visited the Asiatic mainland about 1711 for the purpose of collecting tribute from the Chukche, describes the habitations and remarks that "he found among the Túski ten of the islanders wearing labrets, who had been taken prisoners of war."[1]

Mr. Dall[2] observes that the Túski do not wear labrets, which distinguishing feature, compared with the Chukche, was noticed by Déshneff, as well as all subsequent voyagers. Both sexes tattoo, not only over the face but all over the body. The women in probably all instances bear tattooed vertical lines on the chin, a practice which is not followed by the men. An illustration of tattooing upon the chin of a Port Clarence woman is given elsewhere.

Concerning the representatives of the Eskimo upon the Asiatic side of Bering Strait, the following remarks are reproduced from the memoranda concerning "the Arctic Eskimos in Alaska and Siberia," by John W. Kelly,[3] interpreter, who says of the "Siberian Eskimos:"

> There are settlements of Eskimos at Cape Tchaplin (Indian Point), Plover Bay, and East Cape. How long they have been there and how much of the country they have occupied can only be conjectured. Those occupying St. Lawrence Island, Cape Tchaplin, and part of the shores of Plover Bay, on the mainland of Asia, opposite St. Lawrence Island, speak a dialect nearer like that of Point Barrow or the Mackenzie River than the dialects of the Diomedes or Kotzebue Sound. That the Eskimos of Asia have been there a great many years is a certainty. The Deermen people, whose principal support is domesticated reindeer, have gradually crowded out the Eskimo or Fishmen, and have almost absorbed them by assimilation. They wear no labrets, and in dress and tattooing are the same as the Deermen. That they have lived in underground houses is abundantly proved by the ruins at Cape Tchaplin of old huts which have been framed with the whole jaws of whales. Now they live in huts above ground, covered with walrus hides. They are built in the same manner as those of the Deermen, who use a covering of reindeer robes. From the Deermen they have also learned to cremate their dead, instead of scattering the bodies over the plain, according to the custom of the American Eskimos. Like the American Eskimos, they deposit the personal property of the deceased at his grave. If he was a great hunter, they also erect a monument of reindeer antlers over his

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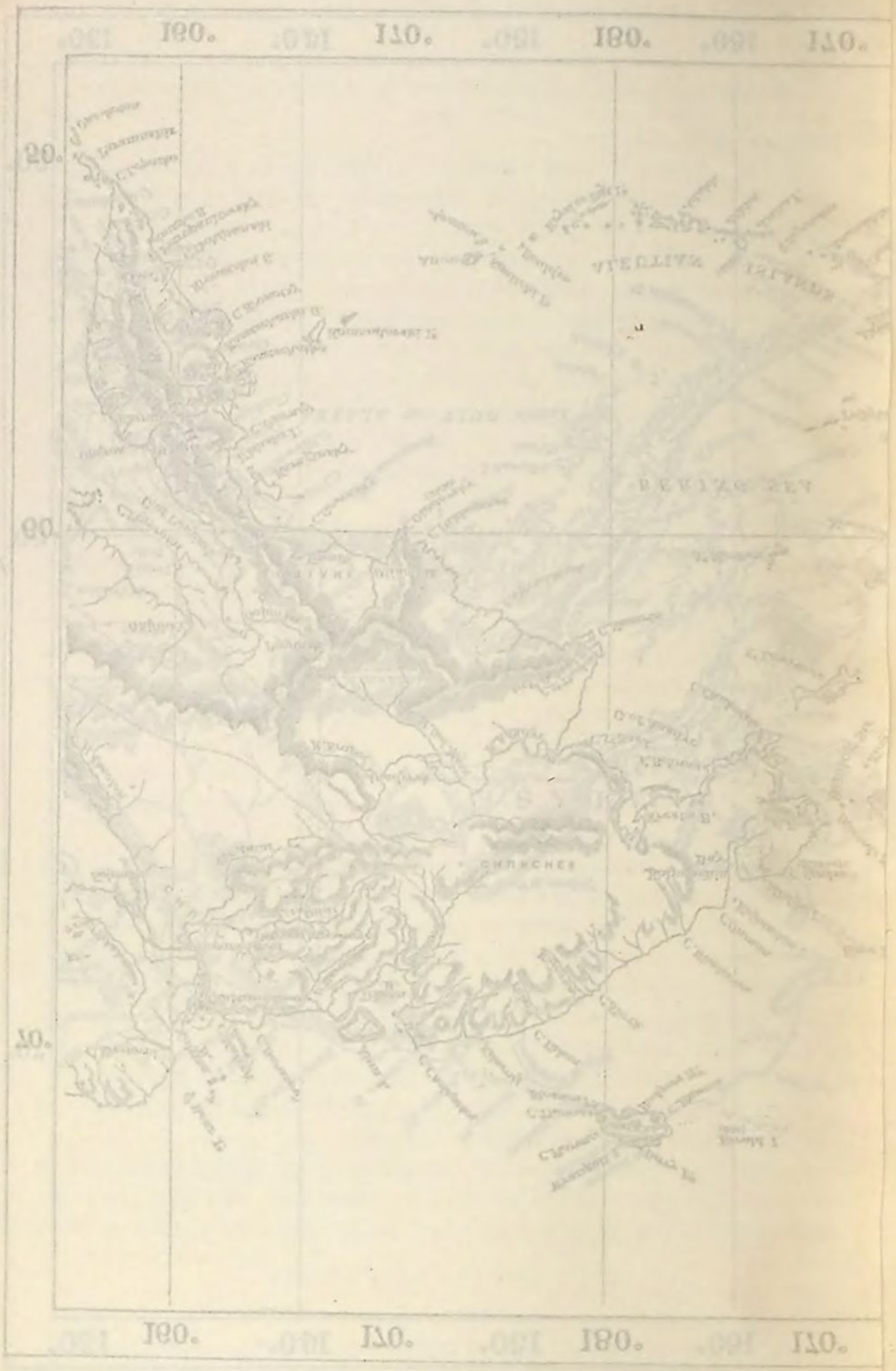
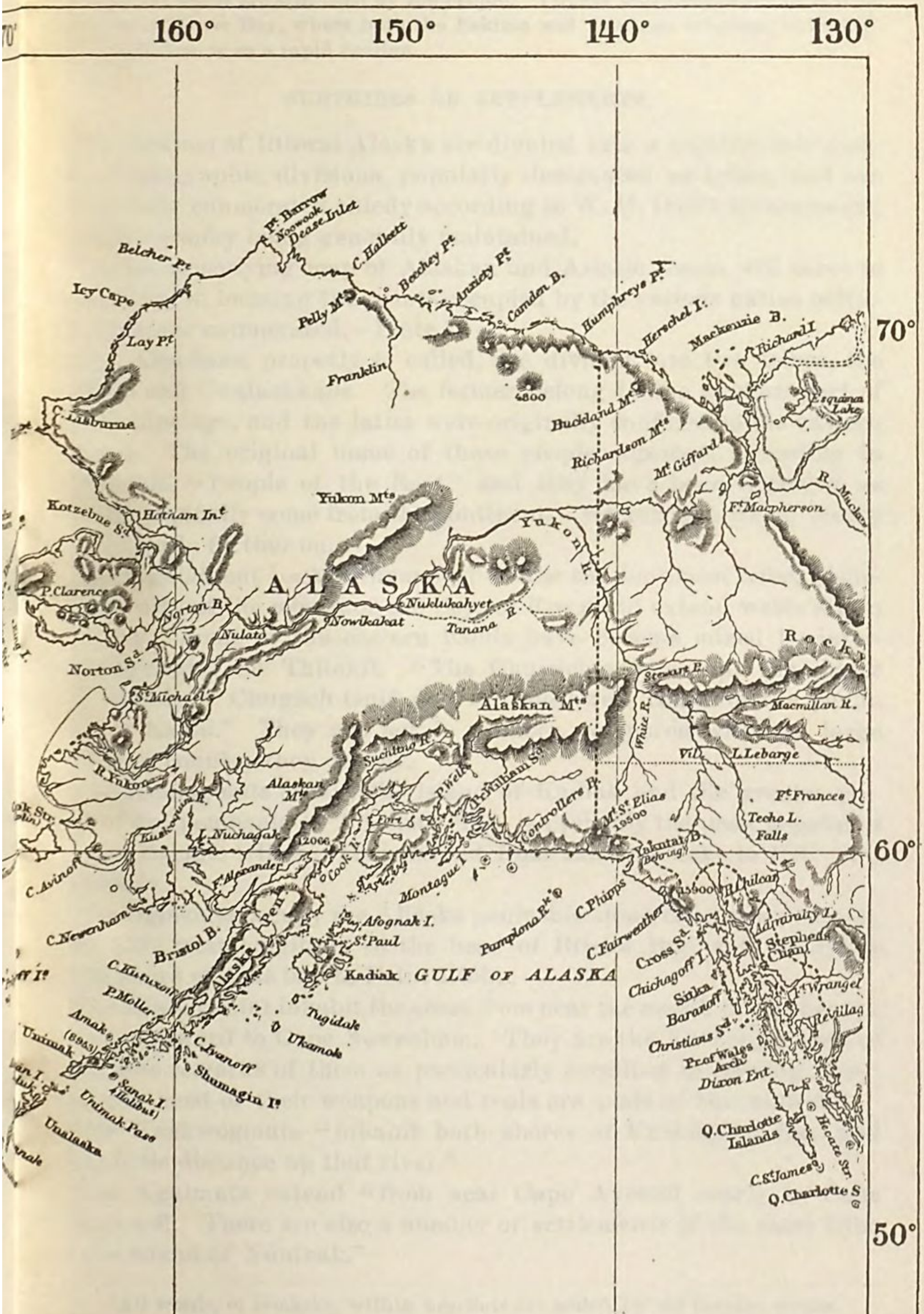
[1] Quoted from W. H. Dall, "Alaska and its Resources." Boston. 1870, p. 376.

[2] Idem, p. 380.

[3] Published in the Bureau of Education Circular of Information No. 2, 1890, p. 8, 9.


180°
170°
160°
150°
140°
130°
120°
110°
100°
90°
80°
70°
60°
50°
40°
30°
20°
10°
CHUKCHES

160°
170°
180°
170°
70°
60°
50°
Wrangell I.
Barry Pt.
C. Florence
Herald I.
(856)
C. Thomas
Blossom Pt.
C. Hawaii
Rodgers H.
Bear I.
Krestovoi
Kolyma R.
C. Medyzei
C. Baranov
Aima L.
C. Chelagskoi
Kekurnij
C. Yakan
Kabtaschkowo
Tchaun B.
Yakan
C. North
C. Wankarem
C. Onman
Koljutschin I.
Idlidlja I
Hope I
Tchukotskia R.
Bogatschenkd
Vetcoi Cotoumoi
Lit. Aniui
Kolymsk
CHUKCHES
Gt. Aniui
Koljutschin Bay
C. Serdze Kamen
Kresta B.
Diomede I.
Beiring Str.
R. Omolon
Anadyrsk
R. Erapol
R. Bol. Main
R. Anadyr
C. Behring
C. St. Basil
G. of Anadyr
C. Chukotski
St. Lawrence
Penjinsk
Ghijinsk
Galoinka
KORIAKI
Vavnik
Oliutorsk
C. Opoukhinsk
C. Navarin
St. Matthew
C. Povorotni
G. of Penjinsk
C. Gowensky
C. Oliutorsky
(2630)
C. Pukhaginsk
Nounivak
BERING SEA
Karaginsky
Ukinska I.
Ongon
Petropavlowsk
C. Oserney
Kavran
Vol.
Vol. (1633)
Kamtschatka
Komandorski Is
Kamtschatka G.
C. Kronotzy
Kronotskoi G.
C. Tschipunski
Petropavlowsky
Avatcha B.
C. Lopatka
Paramushir
One-kotan
Pribylo
Attou
Semitchi I.
Bouldyr
Agattou
Krysi or Rat I.
ALEUTIAN ISLANDS
Adakh
Atkha
Amlia I.
Segouam
Amoukhta


160°
150°
140°
130°
70°
60°
50°
Pt. Barrow
Noowook
Dease Inlet
Belcher Pt.
C. Halkett
Icy Cape
Boochey Pt.
Anxiety Pt.
Pelly Mts.
Camden B.
Humphreys Pt.
Lay Pt.
Franklin
Herschel I.
Mackenzie B.
Richard I.
4800
C. Lisburne
Buckland Mts.
Esquimau Lake
Richardson Mts.
Mt. Gifford
R. Mackay
Yukon Mts.
Kotzebue Sd.
Hotham Inlet
F. Macpherson
Yukon R.
P. Clarence
ALASKA
Norton B.
Nulato
Nuklukahyet
Nowikakat
Tanana R.
Norton Sd.
St. Michaels
Stewart R.
Alaskan Mts.
Macmillan R.
White R.
R. Yukon
Alaskan Mts.
Suchitna R.
Delta
Controllers R.
Mt. St. Elias
18500
Ft. Frances
Techo L.
Falls
Nuchagak
12000
Yakutat Bay
(Behring)
C. Avinoff
C. Newenham
Montague I.
Pamplona R.
C. Phipps
13600
Mt. Chilcat
Bristol B.
Afognak I.
St. Paul
C. Fairweather
Admiralty I.
Cross Sd.
Chichagoff I.
Kadiak
GULF OF ALASKA
Sitka
Baranoff
Wrangel
Christians Sd.
Prof. Wales Arch.
Dixon Ent.
Q. Charlotte Islands
C. St. James
Tugidak
Ukamok
C. Ivanoff
Shumagin Is.
Unimak
Unalaska
Unimak Pass

OF ALASKA.

grave. At East Cape, Siberia, there is a trace of the Arctic Eskimos, but differing from their nearest neighbors, the Diomede people.

In the vicinity of East Cape there are a few ruins of underground houses, and a few Eskimo words are still used by the people. Twenty miles westward from Cape Tchaplin is Plover Bay, where both the Eskimo and Deermen language is spoken, but the Eskimo is on a rapid decline.

SUBTRIBES OR SETTLEMENTS.

The Eskimo of littoral Alaska are divided into a considerable number of geographic divisions, popularly designated as tribes, and are here briefly enumerated chiefly according to W. H. Dall's arrangement, his orthography being generally maintained.

The accompanying map of Alaskan and Asiatic coasts will serve to further aid in locating the points occupied by the various native settlements below enumerated. Plate 1.

The Aleutians, properly so called, are divided into two tribes, the Atkans and Unalashkans. The former belong to the western part of the archipelago, and the latter were originally confined to the eastern portion. The original name of these people signified, according to Humboldt, "People of the East," and they have been regarded as having originally come from the continent, a reference to which theory will be made further on.

The Ugalákmut [=Aígalúxamiut][1] is the southernmost tribe, beginning nearly at the mouth of the Copper River and extend westward to *Icy Bay*. Some of the eastern bands have become mixed by intermarriage with the Thlinkit. "The Chugáchmuts occupy the shores and islands of Chugách Gulf, and the southwest coasts of the peninsula of Kenái." They are few in number, compared with the large extent of country they occupy.

The Kaniagmuts occupy the island of Kadiak and the greater portion of the peninsula of Aliáska. This is probably the most popular of *all* the Eskimo tribes. They extend from Lliámna Lake to 159° west longitude.

The Oglemuts occupy the Aliáska peninsula along the northern coast, from 159° west longitude to the head of Bristol Bay, and along the north shore of that bay to Point Étolin.

The Kiatéqamiut inhabit the coast from near the mouth of Nushergak River westward to Cape Newenham. They are the Nushergágmuts of Dall, who remarks of them as particularly excelling in carving ivory, and that most of their weapons and tools are made of this material.

The Kuskwógmuts "inhabit both shores of Kuskoqúim Bay, and some little distance up that river."

The Agulmuts extend "from near Cape Avénoff nearly to Cape Románzoff. There are also a number of settlements of the same tribe on the island of Núnivak."

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[1] All words, or remarks, within brackets are added by the present writer.

The Mágemuts "inhabit the vicinity of Cape Románzoff, and reach nearly to the mouth of the Yukon. They resemble their southern neighbors more than they do those to the north of them. The women wear labrets. The name Mágemut signifies 'Mink people.'"

The Ekógmuts "inhabit the Yukon delta from Kipníuk to Pastólik, and ascend the river as far as Mauki, some distance above the mission. Those who inhabit the Kwikhpak slough call themselves Kwikhpágmut, a name sometimes applied to the whole tribe." A peculiarity "in many of them is the extreme hairiness of their persons. Many of them have very strong black beards and hairy bodies."

The Unalígmuts, or Únaleet, "occupy the coast from Pastólik to Shaktólik." They have also been designated as the Aziágmut.

The Máhlemuts "occupy the coast of Norton Sound and Bay north of Shaktólik and the neck of the Kávidk Peninsula to Selawik Lake. Their most eastern village is Attenmut, and their western boundary the river which flows northward into Spavárieff Bay, Kotzebue Sound."

The Kaviágmiuts occupy the Káviak Peninsula and Sledge or Áziak Island. "Many of them pass the winter in the southern part of Norton Sound, and there is a large Káviak village at Unalaklík. * * * Their principal villages are Nóokmut, at Port Clarence, and Knik-Tágmut, on Golofnína Bay."

The portrait of a Kaviágmiut man, aged 33 years, is given in plate 2. He is a very intelligent native, and is a clever artisan. Another type of the same tribe is shown in the person of Suku'ut, aged 25 years, from the same locality, plate 3. An interesting illustration of a girl aged 17 years is presented in plate 4. She has a remarkably clear skin, pink cheeks, and bears upon her chin the usual pattern of tattooed lines, extending downward from the mouth.

In plate 5 is reproduced the portrait of an inhabitant of the village of Nuwŭk, at Point Barrow. The features are very much less pleasing than those shown in the preceding figures. Plate 6 represents a young man from the village of Utkiavwiñ.[1]

The Oke-ógmuts are essentially the same as the preceding, but the name is applied "by the Innuit to the small and energetic tribe who inhabit the islands by Bering Strait. They carry on the trade between the two continents, and visit the island of St. Michael every year for the purpose. I have also heard the same name applied to the inhabitants of St. Lawrence Island."

The Eskimo of the Point Barrow region are located, according to Mr. Murdoch,[2] in the villages of Nuwŭk and Utkiavwiñ. Nuwŭk signifies "the Point," and is a slightly elevated knoll at the extremity of Point Barrow, in latitude 71° 23′ north, longitude 156° 17′ west. Utkiavwiñ signifies "the Cliffs," is 11 miles west from Nuwŭk, at Cape Smyth, and is also a high ridge. The nearest neighbors to the east are those

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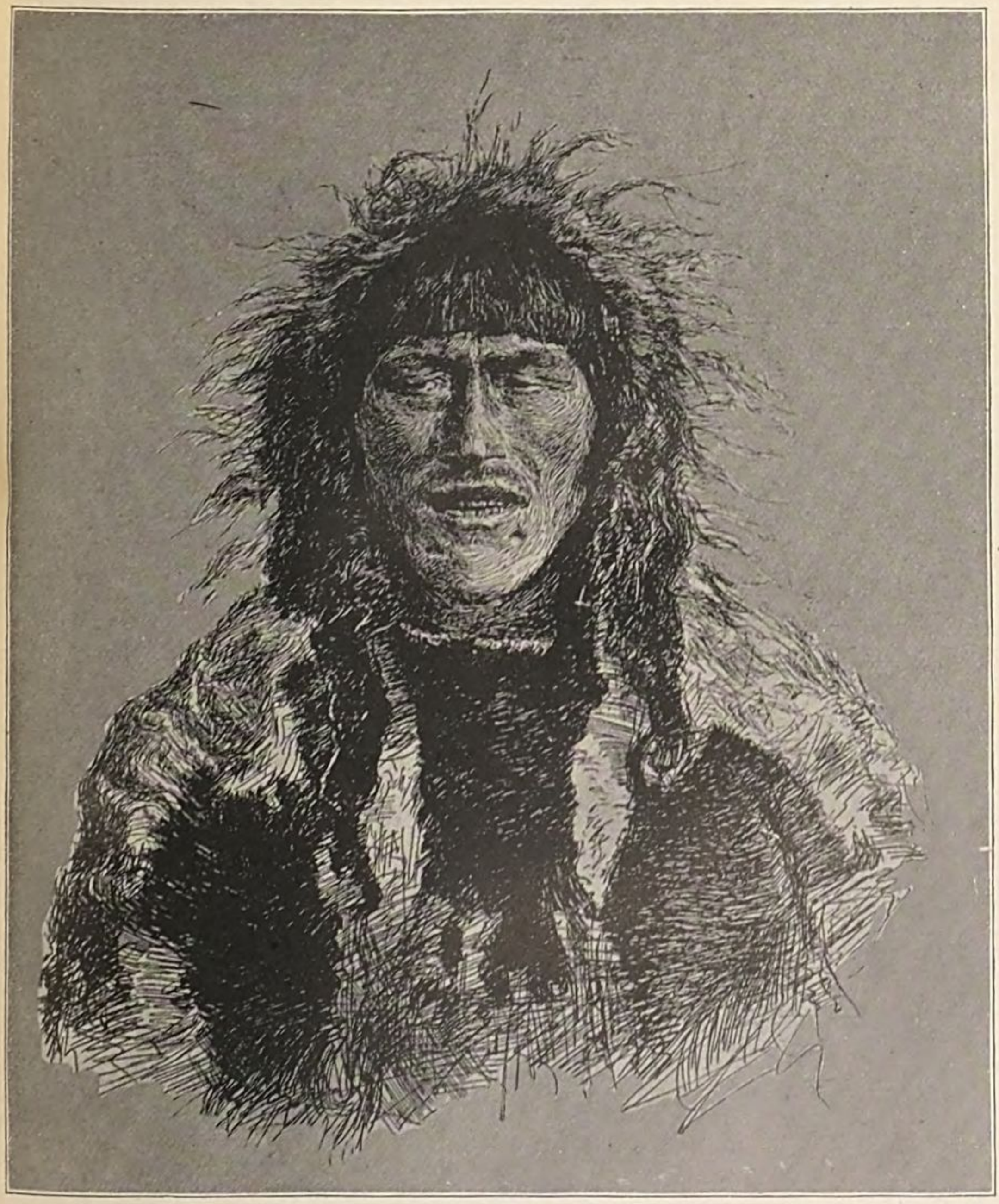
[1] These two portraits are reproduced from the Ninth Annual Report of the Bureau of Ethnology for 1887–88, 1892, figs. 1 and 4.

[2] Idem, p. 26.

NOMIKSE'NER, A KAVIAGMIUT MAN.

SUK'UUK, A KAVIAGMIUT MAN.

NERLUNG'NER, A KAVIAGMIUT GIRL.



UNALINA, A MAN OF NUWUK.

PUKA, A YOUNG MAN OF UTKIAWIÑ.

at Herschel Island, or Demarcation Point, and on the west at a small village between Point Belcher and Wainright Inlet. The natives of these villages are so closely connected, says Mr. Murdoch, "that they are sometimes spoken of collectively as Sidáruñmium" (=Sidarunmiut). "At a distance up the river, which flows into Wainright Inlet, live the Kunmiun, 'the people who live on the river.' These appear to be closely related to the first village below Wainright Inlet, which is named Kilauwitawin." [1]

The people at Point Hope, according to Mr. Murdoch, are known as the Tikera′ñmiun, "inhabitants of the forefinger (Point Hope)."

The natives along the coast east of Point Barrow to and beyond the Mackenzie are often spoken of by the Hudson Bay traders as the Mackenzie River Eskimo. They appear to be identical with those described by Father Petitot as the Taρèoρmeut [=Taχeoχmeut] division of the Tchiglit, and are termed by Murdoch the Kupûnmiun, and inhabit the permanent villages at the "western mouth of the Mackenzie, at Shingle Point and Point Sabine, with an outlying village, supposed to be deserted, at Point Kay." Still another tribe is located at Anderson River and Cape Bathurst, not considered by Petitot as the above named, as he applies the name Kρagmalit. Sir John Richardson, the first to meet with them [1826], calls them "Kette-garrœ-oot." [2]

POPULATION.

With reference to the population of the Eskimo of the several divisions, only approximate figures can be given. The Greenland group, consisting of seventeen villages on the east coast, are stated by Holm, in 1884–85, to number about 550, while on the west coast the "mission Eskimo" numbered 10,122 in 1886, and the northern Greenland Eskimo, or Arctic Highlanders of Ross, number about 200.

Doctor Boas estimates the "Central or Baffin Land Eskimo" at about 1,100.

The natives along the coast in Labrador are stated by Rink, Packard, and others, to number about 2,000 souls.[3]

The Alaskan Eskimo, comprising those of the mainland, as well as the few (40?) upon Little Diomede Island, together with those on St. Lawrence Island and the Aleutian Islanders, are estimated by Dall and others at about 20,000.[1]

This, excepting the Siberian tribe, makes a total of about 34,000 Eskimo. What the former population, before the introduction of liquor and social vices, may have been it is impossible to conjecture. It is stated by one author (Dall) that the Aleutians formerly were estimated at 20,000, but recently numbered only 1,500, which figure has also been given by others, though according to a still later estimate these islanders were put down at 2,200.

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[1] Ninth Annual Report of the Bureau of Ethnology for 1887–88, 1892, pp. 43, 44.

[2] Franklin's Narrative of a Second Expedition to the Shores of the Polar Sea in the years 1825, 1826, and 1827. London, 1828, p. 203.

[3] Sixth Annual Report of the Bureau of Ethnology for 1884–85, 1888, p. 426.

EARLY EXPLORATIONS.

For reasons which will hereafter become evident, it is necessary to refer briefly to the several explorations made to eastern Siberia, and later to the American mainland. In the following historical references I use freely Mr. Dall's remarks, published in his work, "Alaska and its Resources," of which note has before been made.

In the year 1646, the Russians, under Isai Ignátief, pushed their explorations to the east of the Kolyma River, the mouth of which is at about latitude 69° 30′ north and longitude 161° 30′ east, and obtained by barter from some Chukche specimens of walrus ivory. In the following year, 1647, four small vessels sailed eastward of Kolyma, the party being under the command of a Cossack, named Simeon Déshneff. The object of this expedition was to reach the Anadyr River, of which vague reports had been received. Other explorers followed, but it was not until 1648 that the northeast coast of Asia was passed and Bering Sea entered.

Various explorers continued, from year to year, to visit different portions of the coast of Kamchatka, but it was not until 1711 that a Cossack, named Peter Iliúnsen Popoff, arrived at East Cape with the intention of collecting tribute from the Chukche. The visit proved fruitless, but Popoff returned with an account of the Diomede Islanders and the Chukche account of a continent which lay to the east and beyond these islands.

On account of the interest manifested in these discoveries, scientific men succeeded in obtaining the attention of Peter the Great, and instructions for an expedition were delivered to Admiral Apráxin. A few days later the Emperor died, but the Empress, in order to fulfill the wishes of the deceased monarch, ordered the execution of the instructions, and Captain Vitus Bering was nominated to command the expedition. Although the original plan was formulated in 1725, it was not until 1727 that Bering and his companions left St. Petersburg. He sailed past what is now known as St. Lawrence Island, through Bering Strait, and, thus proving the separation of Asia and America, returned to the Kamchatka River on the 20th of September without having seen either the Diomede Islands or the American Coast. He returned to St. Petersburg in 1730, but again went on a voyage of discovery and landed on Bering Island, where he died December 8, 1741.

In the meantime various other navigators and explorers had been making considerable progress in exploring the shores of Kamchatka and approaching the American Coast. In 1731 Pávlutski reached Cape Serdze Káman, in the hope of securing from the Chukche some tribute. This resulted in failure, and in the interim Gwósdeff sailed to the Chukche Coast; a gale drove him eastward, "where they found an island, and beyond it the shores of the continent of America. They met a native in a Kyak, and sailed two days along the coast without being

able to land. A storm came up and they returned to Kamchatka. This completed the exploration of Bering Strait, which had been commenced by Déshneff and his companions."[1]

It was not until July, 1741, that Chírikoff arrived off the American Coast, near Cross Sound. Boats were sent there upon two occasions, and several days later two canoes, filled with natives, came near the ship, but immediately fled to the shore. Various islands were seen by Chírikoff on his return to Kamchatka. During this visit 21 men were lost, de la Croyère, the naturalist, dying of scurvy.

Bering saw land on July 2, and anchored near an island two days later.

Emilian Bássoff discovered the island of Attu, the westernmost of the Aleutian group, in 1745. Glotloff discovered the island of Kadiak, or Kaniag as it was designated by some of the natives, in July, 1763. These islanders were less disposed to friendliness and gave frequent evidences of hostility.

About 1764 Lieutenant Lynd was put in command of an expedition which was organized under the direction of the Empress Catherine. He did not leave Kamchatka until 1767, sailing from Ochótsk toward Bering Strait, passing St. Matthew and St. Lawrence islands, saw Diomede Island, and finally landed on the American Coast south of Cape Prince of Wales. Further explorations of the peninsula of Alaska was made by Krenítzin in 1768.

Cook entered Bering Strait in August, 1778, and, on his return from a voyage northward, explored Norton Sound and Bay. On October 3 he again touched at Unalashka, sailed for the Sandwich Islands, where he was killed by the natives in 1779.

As early as 1788, Mares and Douglas, supercargoes, sailed from Macas to Nootka and to Cooks Inlet. The Spanish claimed the right to sail the Pacific on the northwest coast of America.

In 1791 Billings and Saryćheff visited Unalashka, St. Paul, St. Lawrence, Aziak, and the Diomedes; also touched on the American Coast near Cape Prince of Wales, and then anchored in St. Lawrence Bay on the Asiatic side.

In 1793 the Empress of Russia issued an ukase authorizing the introduction of missionaries into the American colonies, and to the works of these patient laborers we are indebted for many interesting and valuable facts respecting the history of the customs and manners of that time. It is singular, however, that although their accounts often appear unusually concise and comprehensive, the practice of engraving upon ivory and bone, seems to have been entirely overlooked, or more likely may not have been in vogue among them. This subject, however, will be further treated elsewhere.

The natives of Point Barrow are said never to have seen a white man until the year 1826, when the barge of the *Blossom*, under Captain

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[1] Dall. "Alaska and its inhabitants," p. 299.

Beechey, visited their coast. They had, however, received from southern neighbors articles of European manufacture introduced by the Russians, such as tobacco, copper, and other articles, some of which were obtained, according to Murdoch's statement,[1] by way of the Diomede Islands and Siberia.

Visits by other navigators were made at long intervals, and it was not till 1854 that the first whaling vessel came to the Point.

Although the Point Barrow natives are provided with firearms, they would be unable, by means of these alone, to obtain any seals, "as their own appliances for sealing are much better than any civilized contrivances."[1] Mr. Murdoch, whom I have here quoted, states furthermore that "all are now rich in iron, civilized tools, canvas and wreck wood, and in this respect their condition is improved." Nevertheless, in so far as the graphic art is concerned, they appear to be considerably behind the natives of Bristol Bay and Norton Sound.

The eminent Danish antiquarian, Doctor Henry Rink,[2] in his remarks on the probable origin of the Eskimo, speaks of their former location in Greenland as follows:

> According to the sagas of the Icelanders, they were already met with on the east coast of Greenland about the year 1000, and almost at the same time on the east coast of the American continent. Between the years 1000 and 1300, they do not seem to have occupied the land south of 65° north latitude, on the west coast of Greenland, where the Scandinavian colonies were then situated. But the colonists seem to have been aware of their existence in higher latitudes and to have lived in fear of an attack by them, since, in the year 1266, an expedition was sent out for the purpose of exploring the abodes of the Skrælings, as they were called by the colonists. In 1379 the northernmost settlement was attacked by them, eighteen men being killed and two boys carried off as prisoners. About the year 1450 the last accounts were received from the colonies, and the way to Greenland was entirely forgotten in the northern country.

Doctor Rink says that the Eskimos of southern Greenland present features indicating "mixed descent from Scandinavians and Eskimo," the former, however, not having left any sign of influence of their culture or nationality upon the present natives.

In 1585 Greenland was discovered anew, by John Davis, who found it inhabited exclusively by Eskimo.

In the work before cited,[3] Doctor Henry Rink remarks:

> Recent investigations have revealed differences between the Eskimo tribes which indicate that, after having taken their first step to being an exclusively maritime people, they have still during their migrations been subjected to further development in the same direction, aiming at adapting them especially for the Arctic coasts as their proper home. The farther we go back toward their supposed original country, the more of what may be considered their original habits we find still preserved. In the general history of culture these variations must certainly appear trifling, but still I believe that a closer examination of them will throw light on the question how the most desolate and deterring regions of the globe could become

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[1] Ninth Annual Report of the Bureau of Ethnology for 1887-88, 1892, p. 53.

[2] The Eskimo Tribes. Copenhagen and London. 1887.

[3] Idem, pp. 3–5.

peopled. The solution of this problem is facilitated by the fact that the whole Eskimo nation has been less exposed to that contact with other peoples which elsewhere renders such investigations more complicated. These variations are among the Eskimo more exclusively due to natural influences to which the wanderers were exposed during their struggle for existence, and which partly gave rise to new inventions, partly led only to the abolishment of former habits. In some instances also these external influences evidently occasioned decay where the severity of the climate in connection with the isolation and the fewness of inhabitants almost exceeded the bounds of human endurance.

Doctor Rink endeavors to show from this point of view "the peculiarities of the tribes in the different domains of culture agree with the supposition that the original Eskimo inhabited the interior of Alaska; that apart from the true Eskimo a side branch of them in the farthest remote period peopled the Aleutian Islands, whereas people of the principal race later settled at the river mouths, spreading northward along Bering Strait and, hiving off some colonies to the opposite shore, proceeded around Point Barrow to the east, the Mackenzie River, over the central regions or Arctic Archipelago, and finally to Labrador and Greenland. This dispersion may have taken thousands of years; they can only have proceeded in small bands, very much as still they are used to move about during certain seasons. Their only way of procuring subsistence in the vast deserts they passed over, excluded the possibility of national migrations on a larger scale. While in this way they continued to discover new countries, some families were induced to go farther; others remained and finally gave rise to the present scattered settlements. But, in proposing this hypothesis, I consider it a matter of course that Alaska as the original home of the Eskimo is not to be taken in the strictest sense, absolutely excluding adjacent parts of the continent toward the east. But as to the other theory, that the Eskimo should have emigrated from Asia by way of Bering Strait and found the Indian territory already occupied by the same natives as now, this objection must be separately taken into consideration in connection with the facts bearing in favor of the former."

SHELL HEAPS IN THE ALEUTIAN ISLANDS.

The only important researches regarding prehistoric remains in Alaska and the Aleutian Islands are those of Mr. Dall.[1] He remarks that the "shell heaps are found on nearly all the islands of the Aleutian group. They are most abundant and extensive in the islands east of Unalashka, and on the few islands from Amchitka eastward, which are less high and rugged than the others, or on those where the greater amount of level land is to be found. The two necessaries for a settlement appear to have been a stream of water or a spring, and a place where canoes could land with safety in rough

[1]On succession in the shell heaps of the Aleutian Islands. Contributions to North American Ethnology, I, 1877, p. 43.

weather. Where these are both wanting, shell heaps are never found, and rarely when either is absent."

From careful examinations made by Mr. Dall, he deems it probable that the islands "were populated at a very distant period; that the population entered the chain from the eastward; that they were, when first settled on the islands, in a very different condition from that in which they were found by the first civilized travelers," etc. It is furthermore suggested by this writer that there was a later wave of population; that the former people "were more similar to the lowest grades of Innuit (so-called Eskimo) than to the Aleuts of the historic period," and that the stratification of the shell heaps shows a tolerably uniform division into three stages, characterized by the food which formed their staple of subsistence and by the weapons for obtaining as well as the utensils for preparing the food.

The stages are—

I. The littoral period, represented by the Echinus layer.
II. The fishing period, represented by the Fishbone layer.
III. The hunting period, represented by the Mammalian layer.

In concluding his impressions respecting the shell heaps, the author concludes by saying "that those strata correspond approximately to actual stages in the development of the population which formed them, so that their contents may approximately, within limits, be taken as indicative of the condition of that population at the times when the respective strata were being deposited."

PREHISTORIC ART.

With reference to specimens of art or ornament, Mr. Dall[1] remarks:

> The expression of æsthetic feeling, as indicated by attempts at ornamentation of utensils or weapons or by the fabrication of articles which serve only for purposes of adornment, is remarkably absent in the contents of the shell heaps. As a whole, this feeling became developed only at the period directly anterior to the historic period. It was doubtless exhibited in numerous ways, of which no preservation was possible, so that the early record, even for a considerable period, would be very incomplete. We know that great taste and delicate handiwork were expended on articles of clothing and manufactures of grass fiber, which would be entirely destroyed in the shell heaps, and of which only fragmentary remains have been preserved on the mummies found in the latest prehistoric burial caves and rock shelters. * * *
>
> There are some articles used on the kyak which are usually made of bone, and often preserved in the upper mammalian stratum, and upon which some attempts at ornamentation were bestowed. These are little pieces of bone or ivory, in general shape resembling a kneeling figure, with one or two holes, through which cords are passed. * * * The latter were in some cases carved to represent figures of animals. Another species of ornamentation is elsewhere alluded to in the flat thin strips of bone which were fastened to the wooden visor worn in hunting. These were frequently ornamented with typically Innuit patterns of parallel lines, dots, concentric circles, with zigzag markings between them and radiating lines. All

[1] On succession in the shell heaps of the Aleutian Islands, in Contributions to North American Ethnology, I, 1877, p. 43.

these were in black, on the white basis of the bone or ivory. * * * The markings can seldom be accurately described as marks of ownership. I have never seen any definite mark or ornament of this nature among the Aleuts or Western Innuits. They readily recognize their own utensils or weapons without any such aid, and I believe the theory of "marks of ownership," "batons of command," and such like, has been stretched far beyond the point of endurance or accuracy, at least among writers on the Innuit. Drawings, engravings on bone or wood, and pictures of any kind, so far as I have observed, are all subsequent to the period covered by the shell heap deposit. They are invariably quite modern, though the taste for them is now widely spread among the Innuit, especially those of the regions where ivory is readily procured. The coloration of wooden articles with native pigments is of ancient origin, but all the more elaborate instances that have come to my knowledge have marks of comparatively recent origin.

ESKIMO AND CAVE MEN OF FRANCE.

In his "Alaska and its Resources," Mr. Dall presents several illustrations of drawings on bone, very ordinary specimens and limited to poorly executed figures of men hunting. These are given merely to indicate to the reader the general appearance of the etching of the Eskimo. It is related in this connection, however, that these drawings are analogous to those discovered in France in the caves of Dordogne. The numerous specimens of prehistoric art, both incised and carved, which have been given by Messrs. Lartet and Christy in their work entitled Reliquiæ Aquitanicæ,[1] are familiar to most archæologists, so that no reproduction of plates or illustrations is deemed necessary in the present instance.

Mr. W. Boyd Dawkins,[2] an acknowledged authority on the antiquity of man in Europe, remarks at length upon the possible and in fact probable identification between the cave men and the Eskimo. In his conclusions upon comparisons between the respective arts, forms of weapons, apparently similar modes of living, etc., he says:

> On passing in review the manners and customs of all the savage tribes known to modern ethnology, there is only one people with whom the cave men are intimately connected in their manners and customs, in their art, and in their implements and weapons. The Eskimo range at the present time from Greenland on the east along the shores of the Arctic Sea as far to the west as the Straits of Bering, inhabiting a narrow littoral strip of country, and living by hunting, fishing, and fowling. The most astonishing bond of union between the cave men and the Eskimo is the art of representing animals. Just as the former engraved bisons, horses, mammoths, and other creatures familiar to them, so do the latter represent the animals upon which they depend for food. On the implements of the one you see the hunting of the urus and the horse depicted in the same way as the killing of the reindeer and walrus on the implements of the other. * * * All these points of connection between the cave men and the Eskimo can, in my opinion, be explained only on the hypothesis that they belong to the same race. To the objection that savage tribes living under the same conditions might independently invent the same implements, and that therefore the correspondence in the question does not necessarily imply a unity of race, the answer may be made that there are no savage tribes known which use the same set of implements without being connected by blood. The ruder and more

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[1] London, 1875, pp. 204. Pl. 87. Three maps and 132 woodcuts. Quarto.

[2] "Early Man in Britain," 1880, p. 233.

common instruments, such as flakes, and in a lesser degree scrapers, are of little value in classification; but where a whole set agrees, intended for various use, and some of them rising above the most common wants of savage life, the argument as to race is of considerable weight. It is still further strengthened by the identity of art. The articles found in the caves of Britain, Belgium, France, or Switzerland differ scarcely more from those used in west Georgia than the latter from those of Greenland or Melville Peninsula.

From these considerations it may be gathered that the Eskimos are probably the representatives of the cave men, and protected within the Arctic Circle from those causes by which they have been driven from Europe and Asia. They stand at the present day wholly apart from all other living races, and are cut off from all both by the philologer and the craniologist. Unaccustomed to war themselves, they were probably driven from Europe and Asia by other tribes in the same manner as within the last century they have been driven farther north by the attacks of the Red Indian.

The theory that the peoples of the circumpolar regions might be the descendants of the ancient cave dwellers of France has been entertained not only by Mr. Dawkins. Among other arguments employed are (1) the apparent similarity of environment, and that as the southernmost margins of the receding ice, in glacial times, slowly moved northward, the ancient cave people continued their migration in that direction until their present location was reached; (2) the general resemblance in the carved weapons and utensils of reindeer horn, and also some of the portrayals of animal forms which occur thereon.

From evidence based upon investigations by Doctor Rink, and the archæologic indications noted by Mr. Dall and others, the Eskimo are believed to have become a littoral people in America by expulsion from some interior regions of North America, such expulsion having been brought about through the northward expansion of the Athabascan tribes toward the northwest and the Algonkian tribes toward the northeast. Even within historic times the Eskimo occupied a much more extensive coast line southward on the Atlantic than at present, and it is impossible to conjecture what may not have been the southern limits, in prehistoric times, with reference to the first theory above named.

It is believed by some geologists that as the glaciers of western Europe gradually receded, the direction of migration of the prehistoric people was toward the British Isles, the Scandinavian Peninsula, and Lapland. The theory of their passage across to Greenland does not appear to be supported by any prehistoric remains, such as one would hope to discover after the recovery of the great amount of excellent material indicating a peculiar advancement in the arts of fashioning weapons and utensils of ivory and horn. Neither does there survive anything in Greenland but the simplest type of artistic decoration on ivory or bone, such as lines, dots, etc., which is characteristic of the Eskimo everywhere, excepting in Alaska, where the greater development was due to other causes, which will be mentioned farther on.

Neither is there apparent evidence that the Eskimo came across Bering Strait, as the survivors of the ancient cave men of Europe.

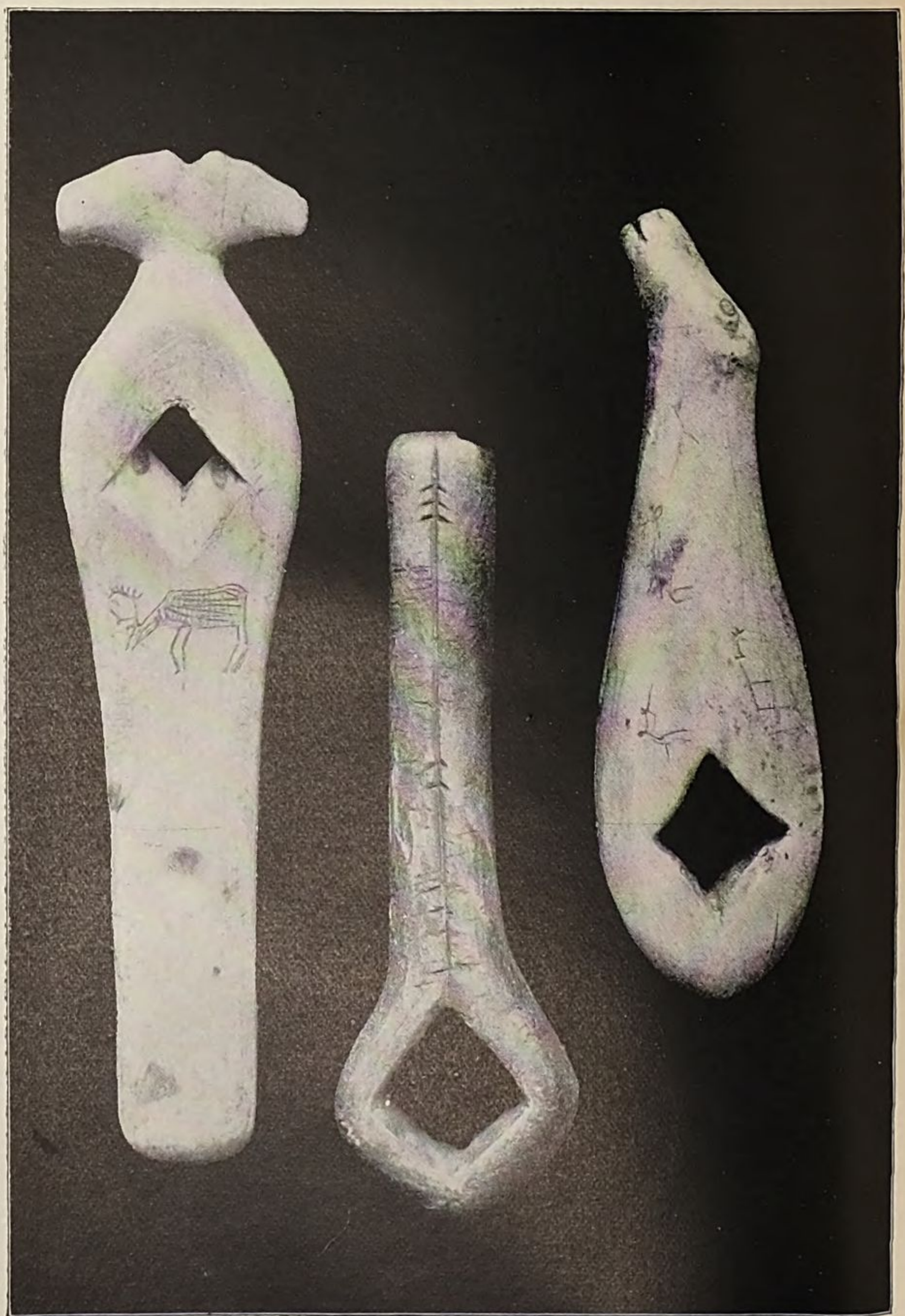
ARROW STRAIGHTENERS.

EXPLANATION OF PLATE 7.

Fig. 1. ARROW AND SPEAR STRAIGHTENER.
(Cat. No. 44383, U. S. N. M. From Cape Nome, Alaska. Collected by E. W. Nelson.)

Fig. 2. ARROW AND SPEAR STRAIGHTENER.
(Cat. No. 45109, U. S. N. M. Sledge or Aziak Island, Alaska. Collected by E. W. Nelson.

Fig. 3. ARROW AND SPEAR STRAIGHTENER.
(Cat. No. 44745, U. S. N. M. Sledge Island, Alaska. Collected by E. W. Nelson.)



ARROW STRAIGHTENERS.

EXPLANATION OF PLATE 8.

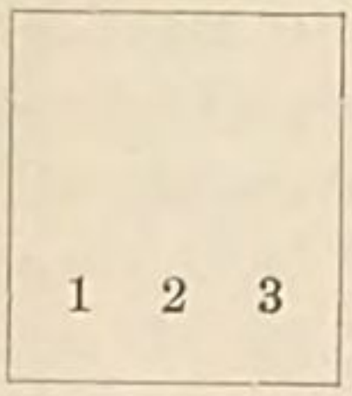


Fig. 1. ARROW AND SPEAR STRAIGHTENER.
(Cat. No. 63723, U. S. N. M. Diomede Islands, Alaska. Collected by E. W. Nelson.)

Fig. 2. ARROW AND SPEAR STRAIGHTENER.
(Cat. No. 43958, U. S. N. M. Nubuiakchugaluk, Alaska. Collected by E. W. Nelson.)

Fig. 3. ARROW AND SPEAR STRAIGHTENER.
(Cat. No. 44274, U. S. N. M. Cape Darby, Alaska. Collected by E. W. Nelson.)

With regard to the second theory, it would be strange indeed if there were not some general similarities between the weapons and utensils of two distinct uncivilized peoples when both used the same materials—reindeer horn—for such articles; and, furthermore, the attempted portrayal of animals of like genera would naturally produce results of very general likeness.

Finally, it has been suggested, and the burden of proof appears to indicate, that the development of pictographic art among the Alaskan Eskimo was attributable to their contact with the Russians; and that, although these natives preserved a limited degree of culture as to decorating by simple lines and dots their weapons and a few other articles of daily use, yet the objective representation of any animate or other forms is believed to have been adopted since the earliest visits of civilized man to the Alaskan Coast.

Several Alaskan utensils, however, used as arrow and spear straighteners are here illustrated in plate 7, figs. 1, 2, and 3, and plate 8, figs. 2 and 3, and are apparently similar to some like remains from the caves of France figured by Messrs. Lartet and Christy.

Upon closer examination it will be observed that besides the similarity of form, due chiefly to the reason that both types are of similar materials, the representation of animal forms by engraving, or incision, appears to belong to a different school of artistic work, if such a term may here be employed; a "sketchy" outline of an animal frequently consisting of but a few suggestive incisions here and there, as in very modern nineteenth century art work, producing an effect in several instances as the reindeer figured by Lartet and Christy in their work before cited, which artistic products appear "too artistic" for the culture status of cave men such as are portrayed in the deductions of the gentlemen above quoted by W. Boyd Dawkins and others who have followed up the same theme. The work of the cave men is apparently vastly superior in one respect to that of the Eskimo, and again from another aspect inferior to it—inferior in various ways, as will be learned by a perusal of the results attained by the Eskimo in the representation of both objective and subjective ideas, as well as an advancement toward conventionalization beyond that practiced by peoples who are apparently further advanced in other respects.

ENVIRONMENT.

So many narratives relating to the life and social conditions of the Eskimo, as well as to the topographic peculiarities of the countries occupied by the various subdivisions of this people, have been published at various times and by various authorities, that anything further in this connection would be superfluous, especially in a paper devoted more particularly to the graphic arts.

The habitations and clothing, such as are required in an unusually inhospitable climate, are both illustrated in the native pictography.

The forms of habitations are more particularly referred to elsewhere, and various native representations are reproduced for the sake of comparison both as to artistic merit as well as indicating personal or tribal variations dependent on climatic requirements.

The styles of clothing are not often referred to in Eskimo etchings, tattooing and labrets being sometimes indicated in carvings, as well as in incised characters. Some interesting carvings, with delicate artistic touches to accentuate the effects of tattooing, are given elsewhere.

ORNAMENTS AND LABRETS.

In some of the etchings are portrayed the outlines of human figures—in various attitudes, though especially as if in the act of dancing—to the rear portion of the body of which are attached little tail-like appendages resembling tails of animals.

This may be explained by quoting Captain Beechey,[1] as in his reference to the natives found northward of Cape Prince of Wales, within 4½ miles of Schismareff Inlet, he states that, in addition to certain described articles of clothing, "they have breeches and boots, the former made of deer's hide, the latter of seal's skin, both of which have drawing strings at the upper part made of seahorse hide. To the end of that which goes round the waist they attach a tuft of hair, the wing of a bird, or sometimes a fox's tail, which, dangling behind as they walk, gives them a ridiculous appearance, and may probably have occasioned the report of the Tschutschi, recorded in Muller, that the people of this country have 'tails like dogs.'"

Among the trimmings and ornaments attached to the clothing the Point Barrow Eskimo[2] also attach at the back the tail of an animal, usually a wolverine's. "Very seldom a wolf's tail is worn, but nearly all, even the boys, have wolverine tails, which are always saved for this purpose and used for no other. The habit among the Eskimo of western America of wearing a tail at the girdle has been noticed by many travelers, and prevails at least as far as the Anderson River," where it was noticed by Father Petitot, who, in describing the dress of the "chief," remarks "par derrière il portait aux reins une queue épaisse et ondoyante de renard noir."[3]

Captain Beechey[4] first observed lip ornaments at Schismaeff Inlet, a short distance north of Cape Prince of Wales, and thence northward to Point Barrow, seemingly a common practice along this coast. "These ornaments consist of pieces of ivory, stone, or glass, formed with a double head, like a sleeve button, one part of which is thrust through a hole bored in the under lip. Two of these holes are cut in a slanting direction about half an inch below the corners of the mouth. The

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[1] Narrative of a Voyage to the Pacific and Bering's Strait, London, I, 1831, p. 248.
[2] Ninth Annual Report of the Bureau of Ethnology, 1887–88, 1892, p. 138.
[3] Monographie, p. xiv.
[4] Idem, p. 249.

incision is made when about the age of puberty, and is at first the size of a quill. As they grow older, the natives enlarge the orifice, and increase the size of the ornament accordingly, that it may hold its place. In adults this orifice is about half an inch in diameter, and will, if required, distend to three-quarters of an inch." The same practice in every respect is also observed at Chamisso Island,[1] a short distance from the above locality, and further reference concerning the natives is quoted from the same authority as follows: "They readily disengaged these lip ornaments from their lips, sold them, without minding the least inconvenience of the saliva that flowed through the badly cicatriced orifice over the chin; but rather laughed when some of us betrayed disgust at the spectacle, thrusting their tongues through the hole and winking their eyes."

ART FACILITY.

Mr. Alfred C. Haddon, in his admirable work on "Evolution in Art,"[2] remarks of the early methods of conveying information between one man and another, where oral or gesture language are impossible, that pictorial delineation must be resorted to; and further, that "probably one of the earliest of this needs was that of indicating ownership, and it may be that many devices in primitive implements and utensils have this as one reason for their existence, although the nature of the ornamentation may be owing to quite a different reason."

It is not of rare occurrence to find upon the arrows and other possessions of our native Indian tribes various marks by means of which individual property may be identified; and among some of the pueblo Indians decorated pottery bears "maker's marks" in such manner that, although the tribe at large may not recognize the maker of any particular decorated vessel, yet such a specimen will at once be identified as originating in, or with, a certain family, and when application is made at the designated abode, the individual will there be pointed out, or named if absent.

It seems possible that the various markings upon the weapons from the Alaskan shell heaps may have served as "property marks," and it would appear, also, to have been found expedient for the native sea-going hunters to devise and adopt some sort of a system by means of which they might be enabled to identify and recover any stray or floating weapon, or the animal in which such weapon might be found, or possibly both.

Mr. Haddon remarks that "the beautifying of any object is due to impulses which are common to all men, and have existed as far back as the period when men inhabited caves and hunted the reindeer and mammoth in western Europe."[3] Apparently the oldest markings thus

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[1] Father Petitot, Monographie, p. 250.

[2] "Evolution in Art." London, 1895, p. 203.

[3] Idem, pp. 3, 4.

used consisted of simple lines and punctures or perforations, such as are found at present among the Greenland and Labrador Eskimo, though among the latter small carvings are also beginning to be more abundant.

In his reference to the Kaniags, Mr. Ivan Petroff[1] says they use whale spears about 6 feet in length, armed with slate points. "Upon the point of his spear each hunter carves his mark to enable him to claim his quarry."

Mr. L. M. Turner informs me that Eskimo property marks are unknown to him, although each hunter, or maker of weapons, will recognize his own workmanship, as well as that of others, by different peculiarities of individual skill. Among the sea-otter hunters of the Aleuts, they do have marks by which the detachable point of the otter spear may be known. "This point is often copper, obtained from copper bolts from a Russian vessel long ago stranded on their shore; and as the spear is made with exquisite skill, the point is also delicate and of particular form, so that a difficulty would arise as to whose spear point strikes nearest the nose of the creature. In its struggles the point is torn loose from the strong, yet slender, sinew line holding it to the spear. Another thrower may succeed in striking it and capture the otter, but he whose point is nearest the nose may claim the skin. A fair degree of liberality is usually manifested in such instances."[2]

The residence in Point Barrow of Mr. Murdoch—extending over a period of perhaps three years—afforded him ample opportunity to study the art of the Eskimo of that northernmost extremity of Alaska. In his report before mentioned he remarks:

> The artistic sense appears to be much more highly developed among the western Eskimo than among those of the east. Among the latter, decoration appears to be applied almost solely to the clothing, while tools and utensils are usually left plain, and if ornamented are only adorned with carving or incised lines. West of the Mackenzie River, and especially south of Bering Strait, Eskimo decorative art reaches its highest development, as shown by the collections in the National Museum. Not only is everything finished with the utmost care, but all wooden objects are gaily painted with various pigments, and all articles of bone and ivory are covered with ornamental carvings and incised lines forming conventional patterns.
>
> There are in the collections also many objects that appear to have been made simply for the pleasure of exercising the ingenuity in representing natural or fanciful objects, and are thus purely works of art. * * * As would naturally be expected, art at Point Barrow occupies a somewhat intermediate position between the highly developed art of the southwest and the simpler art of the east. * * * It will be noticed that whenever the bone or ivory parts of weapons are decorated, the ornamentation is usually in the form of incised lines colored with red ocher or soot. These lines rarely represent any natural objects, but generally form rather elegant conventional patterns, most commonly double or single borders, often joined by oblique cross lines or fringed with short pointed parallel lines. * * *
>
> The only decorative work in metal is to be seen in the pipes and their accompanying picks and fire steel. * * *

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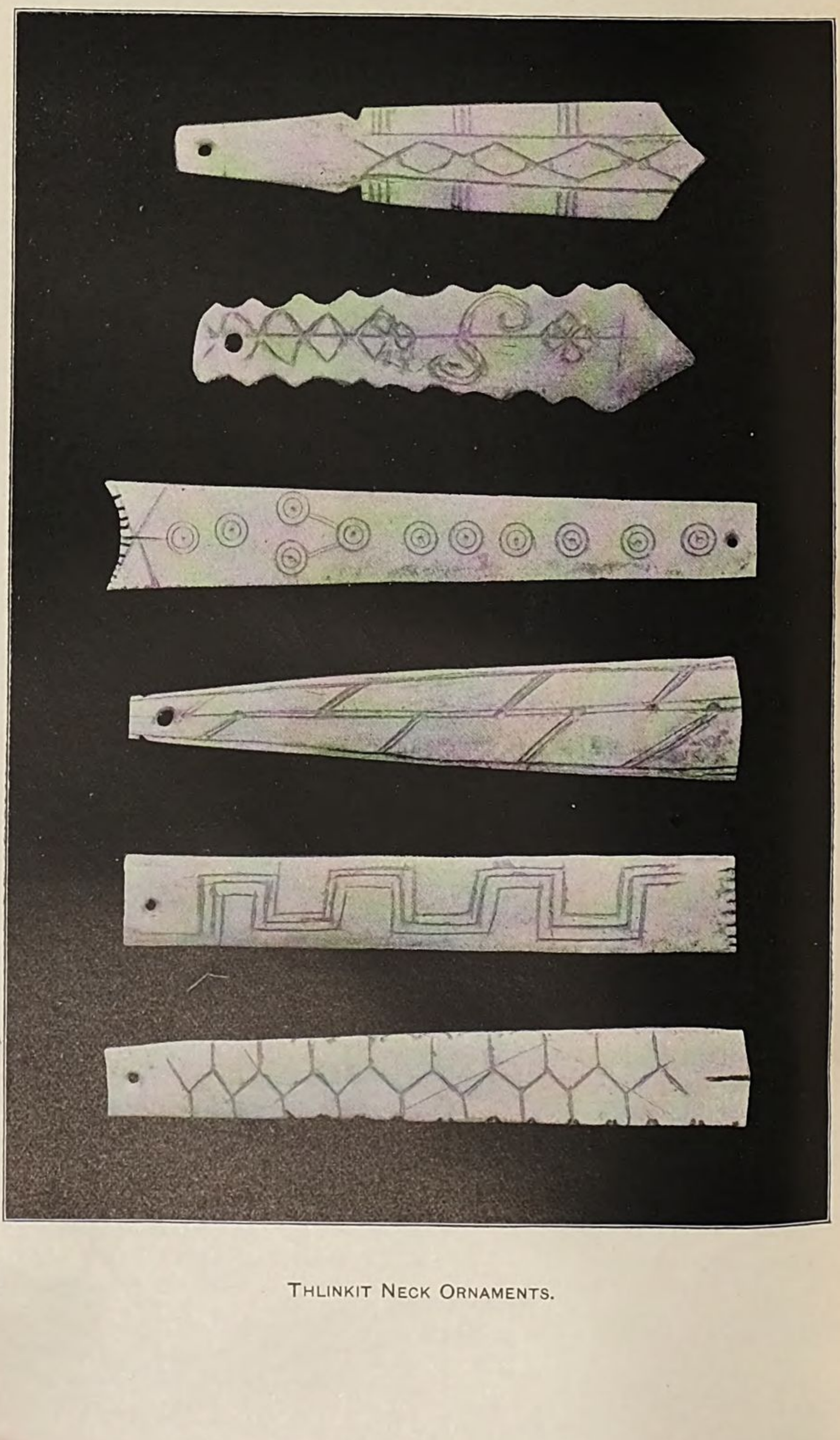
[1] Report on the population, industries, and resources of Alaska, Tenth Census, 1880, VIII, p. 142.

[2] Personal letter of date of May, 1896.



THLINKIT NECK ORNAMENTS.

EXPLANATION OF PLATE 9.

PENDANTS OF BONE USED BY SHAMANS FOR ORNAMENTING NECKLACE.

(Cat. No. 168371, U. S. N. M. Thlingit Indians. Collected by Lieut. G. F. Emmons, U. S. N.)

Mr. Dall remarks that the forms in general of the Eskimo are very much alike throughout the entire area occupied by this people; but he continues in another place, "Similar drawings are common everywhere among the Innuit, while I have never seen among the Tenneh tribes of the northwest any similar specimens of art."[1]

Since the time of Mr. Dall's researches in Alaska, however, various specimens of Thlinkit art designs have been received by the National Museum. Several of these, consisting of neck ornaments, are reproduced in plate 9, figs. 1 to 6, and bear purely Eskimo forms of ornamentation obtained through the medium of intertribal traffic, to which other reference is made in connection with trade routes or culture routes.

The ornamentation of utensils, articles of personal adornment, and of weapons is limited among the Eskimo eastward of Alaska to lines and dots in various combinations. Carvings occur also, small figures, both flat and in imitation of the animals with which the artist is familiar. The engraving upon ivory and bone for the purpose of recording hunting, fishing, and other exploits and pursuits, appears to be entirely absent in the east, being confined to the natives of Alaska, the Siberian Eskimo—the Yúit—and recently copied by other neighboring peoples.

In the vicinity of Chamisso Island, a short distance above Cape Prince of Wales, Captain Beechey[2] found various kinds of utensils, weapons, and other manufactures of the natives, upon some of which were engraved various objects, to which he refers as follows:

> On the outside of this and other instruments there were etched a variety of figures of men, beasts, birds, etc., with a truth and character which showed the art to be common among them. The reindeer were generally in herds. In one picture they were pursued by a man in a stooping posture in snowshoes; in another he had approached nearer to his game, and was in the act of drawing his bow. A third represented the manner of taking seals with an inflated skin of the same animal as a decoy; it was placed upon the ice, and not far from it was a man lying upon his belly with a harpoon ready to strike the animal when it should make its appearance. Another was dragging a seal home upon a small sledge; and several baidars were employed harpooning whales which had been previously shot with arrows; and thus, by comparing one with another, a little history was obtained which gave us a better insight into their habits than could be elicited from any signs or imitations.

Mr. John Murdoch,[3] in quoting Mr. L. M. Turner that the natives of Norton Sound keep a regular record of hunting and other events engraved upon drill bows, remarks that "we did not learn definitely that such was the rule at Point Barrow, but we have one bag handle marked with whales, which we were told indicated the number killed by the owner." Several specimens are then referred to as having figures incised upon them, colored both in red or in black, together with very small illustrations of the bow, upon which the figures are so greatly

[1] Ninth Annual Report of the Bureau of Ethnology for 1887–88, 1892, p. 238.
[2] Idem, p. 251. (Visit made in 1826.)
[3] Idem, p. 177.

reduced as to be of no value in the study of pictographic representation of objects, ideas, or gestures.

Mr. Murdoch[1] remarks furthermore:

> The only thing that we saw of the nature of numerical records were the series of animals engraved upon ivory, already alluded to. In most cases we were unable to learn whether the figures really represented an actual record or not, though the bag handle already figured was said to contain the actual score of whales killed by old Yû'ksĭña. The custom does not appear to be so prevalent as at Norton Sound. * * * With one exception they only record the capture of whales or reindeer. The exception * * * presents a series of ten bearded seals. The reindeer are usually depicted in a natural attitude, and some of the circumstances of the hunt are usually represented. For instance, a man is figured aiming with a bow and arrow toward a line of reindeer, indicating that such a number were taken by shooting, while a string of deer, represented without legs as they would appear swimming, followed by a rude figure of a man in a kaiak, means that so many were lanced in the water. Other incidents of the excursion are also sometimes represented. On these records the whole is always represented by a rude figure of the tail cut off at the "small," and often represented as hanging from a horizontal line.
>
> We also brought home four engraved pieces of ivory, which are nothing else than records of real or imaginary scenes.

The above remarks, with the description of the four specimens elsewhere reproduced, comprise about all the attention that this interesting subject appears to have received during a three years' residence at Point Barrow among natives who surpass almost any other peoples in North America in the graphic arts.

It is fortunate that the National Museum has in its possession the rich collections made by Messrs. Nelson and Turner, both of whom appreciated the value of such material and availed themselves of the opportunity of securing it, as well as information pertaining to the interpretation of many of the pictographic ideas shown.

In his medical and anthropological notes relating to the natives of Alaska, Doctor Irving C. Rosse[2] remarks:

> Some I have met with show a degree of intelligence and appreciation in regard to charts and pictures scarcely to be expected from such a source. From walrus ivory they sculpture figures of birds, quadrupeds, marine animals, and even the human form, which display considerable individuality notwithstanding their crude delineation and imperfect detail. * * * Evidences of decoration are sometimes seen on their canoes, on which are found rude pictures of walruses, etc., and they have a kind of picture writing by means of which they commemorate certain events in their lives, just as Sitting Bull has done in an autobiography that may be seen at the Army Medical Museum.
>
> When we were searching for the missing whales off the Siberian coast, some natives were come across with whom we were unable to communicate except by signs, and wishing to let them know the object of our visit, a ship was drawn in a notebook and shown to them with accompanying gesticulations, which they quickly comprehended, and one fellow, taking the pencil and note book, drew correctly a pair of reindeer horses on the ship's jib boom—a fact which identified beyond doubt the derelict vessel they had seen. * * *

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[1] Ninth Annual Report of the Bureau of Ethnology for 1887–88, 1892, p. 361.

[2] Cruise of the Revenue-Cutter *Corwin* in Alaska and the Northwest Arctic Ocean, in 1881. Washington, D. C., 1883, p. 37.

The above-named author furthermore refers to natives making pencil and pen-and-ink sketches, one in particular having taught himself by copying from the "Illustrated London News." These sketches, "though creditable in many respects, had the defects of many Chinese pictures, being faulty in perspective." Doctor Rosse concludes by saying:

As these drawings equal those in Doctor Rink's book, done by Greenland artists, I regret my inability to reproduce them here. As evidences of culture, they show more advancement than the carvings of English rustics that a clergyman has caused to be placed on exhibition at the Kensington Museum.

Doctor Henry Rink[1] says:

The art exhibited by the Alaska Eskimo in ornamenting their weapons and utensils is often mentioned in travelers' reports from the time when they were first visited by Europeans. To their skill in carving and engraving, we must join this taste displayed in the same way in making their clothing. Again, when we pass from Alaska to the east, we see this relish for the fine arts declining, and in western Greenland proofs of it have been rather scarce. But the latest expedition to the east coast of this country has discovered that a small isolated tribe here in the vast deserts of the extreme east almost rivals the Alaska artists with respect to carving in bone and ornamenting their weapons and utensils. The chief difference is, that in Alaska, engravings illustrating human life and the animals of the country are the most popular objects of the artist, whereas the east Greenlanders excel in small reliefs representing for the most part animals and mythological beings grouped together and fastened with admirable taste and care to the surface of the wooden implements.

With reference to the arts of the Eskimo of Greenland, Doctor Henry Rink[2] remarks:

It must be noticed that though the present Greenlanders appear to have a pretty fair talent for drawing and writing, scarcely any traces of the arts of drawing and sculpture belonging to earlier times remain, with the exception of a few small images cut out in wood or bone, which have probably served children as playthings. The western Eskimo, on the other hand, displayed great skill in carving bone ornaments, principally on weapons and tools.

Drawings made by Greenland Eskimo for Doctor Rink greatly resemble the American schoolboys' efforts. A recent production of precisely like character in almost every respect is from the island of Kolguev, and reproduced herewith in plate, together with the following explanation:

Some interesting illustrations of Samoyed drawings are given by Mr. Aubyn Trevor-Battye in his "Ice-bound on Kolguev," Westminster, 1895. Kolguev Island lies 50 miles north of Arctic Europe, and is separated from the continent by what is known as Barent's Sea. It is about midway, in distance, between Waygat Island—immediately south of Novaya Zemblya—and the eastern extremity of Lapland. The Samoyeds here are entirely isolated, from the fact that they possess no boats that could venture 50 miles across the sea—an interesting cir-

[1] "The Eskimo Tribes." Copenhagen and London, 1887, pp. 15, 16.
[2] "Tales and Traditions of the Eskimo." Edinburgh and London, 1875, p. 69.

cumstance, because they are often, from various supposed or accidental similarities in customs and manners, coupled with the Eskimo, a people with whom the kayak and umiak are the chief methods of transportation.

The illustrations represent ordinary pursuits, and appear to be made upon paper by means of a pencil. The peculiarities of drawing are very much of the same character as the Eskimo sketches obtained by Doctor Rink in Greenland. One example will suffice. Plate 10 represents Samoyeds killing walrus. The black dots on the right are heads of seals, at which a man, lying flat upon the ice, appears to be shooting. The hunter appears as if placed in the air, though in reality the view seems to be from above—as a bird's-eye view—the figure of the man corresponding, in this particular, to like portrayals in several Eskimo engravings on ivory, from Alaska.

Captain Parry mentions having charts made by the natives of Winter Island. A first attempt made "was by placing several sheets of paper before Iligliuk, and roughly drawing on a large scale an outline of the land about Repulse Bay and Lyon Inlet, and terminating at our present winter quarters. * * * Iligliuk was not long in comprehending what we desired, and with a pencil continued the outline, making the land trend, as we supposed, to the northeastward. The scale being large, it was necessary when she came to the end of one piece of paper to tack on another, till at length she had filled ten or twelve sheets, and had completely lost sight of Winter Island * * * at the other end of the table. The idea entertained from this first attempt was that we should find the coast indented by several inlets, and in some parts much loaded with ice, especially at one strait to the northward of her native island, Amitioke, which seemed to lead in a direction very much to the westward. Within a week after this, several other charts were drawn by the natives in a similar way. * * * The coast was here delineated as before, on a very large scale, but much more in detail, many more islands, bays, and names being inserted. It was observable, however, that no two charts much resembled each other, and that the greater number of them still less resembled the truth in those parts of the coast with which we were well acquainted."[1]

An interesting illustration of a Greenland map made by natives of the east coast is given by Mr. G. Holm in his Ethnographic Sketch of Angmagsalikerne.[2] This consists of three blocks of wood, along the edges of which are cut various indentations and curves, leaving projections, all of which are intended to portray the contour of the shore lines between various important points on the east shore of Greenland. Channels, capes, islands, and other topographic features are apparently well reproduced, at least sufficiently clear to permit of their identification when compared with a large chart of the locality referred to.

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[1] "Tales and Traditions of the Eskimo," by Doctor Henry Rink. Edinburgh and London, 1875, pp. 162, 163.

[2] Ethnologisk Skizze af Angmagsalikerne (Særtryk af Meddelelser om Grønland. X). Kjøbenhavn. 1887. 8°.

KOLGNEV SAMOYED WALRUS HUNTERS.

Mr. Alfred C. Hadden[1] says:

> All human handiwork is subject to the same operation of external forces, but the *material* on which these forces act is also infinitely varied. The diverse races and people of mankind have different ideas and ideals, unequal skill, varied material to work upon, and dissimilar tools to work with. Everywhere the environment is different. * * *
>
> The conclusion that forced itself upon me is that the decorative art of a people does to a certain extent reflect their character. A poor, miserable people have poor and miserable art. Even among savages leisure from the cares of life is essential for the culture of art. It is too often supposed that all savages are lazy and have an abundance of spare time, but this is by no means always the case. Savages do all that is necessary for life; anything extra is for excitement, æsthetics, or religion; and even if there is abundance of time for these latter, it does not follow that there is an equivalent superfluity of energy.

The Eskimo are a peculiarly lively people, and keenly appreciate anything ludicrous. Contrary to the Indian generally, they can enjoy a practical joke without thought of resenting such if personal. Such a condition, especially when there is an abundance of food, so that unoccupied time may be utilized for social enjoyment, is one which is apt to foster pursuits that lend gratification and pleasure to the sight and stimulate artistic tendencies. Shamanism prevails extensively and ceremonials are frequent; and apart from this there are numberless individual instances where natives consult the shaman for success in almost every avocation, and also for the exorcism of demons from the body of the sick, and for "hunter's medicine," i. e., securing the help of a shaman that game may be directed in the way of the hunter. It is but reasonable to presume, therefore, that the superstitions and cult beliefs should, to a certain degree, manifest themselves in the art, as well as to be the means of developing a symbolism similar in degree to that found among other peoples living under similar conditions and surrounded by like environment.

The possible introduction into western Alaska of articles of foreign art or workmanship may thus have had but little influence upon the native Eskimo in adopting new designs and patterns, with which he was unfamiliar and the signification of which he did not comprehend, but it may have suggested to him a simplification of approaching forms with which he may already have been familiar.

MATERIALS EMPLOYED.

IVORY.

The material generally used by the Eskimo of Alaska is walrus ivory. This is both durable and sufficiently hard to retain indefinitely, with proper care, the most delicate etchings. Its white or cream tint forms a delicate background for any colored incisions, and in instances where from age or otherwise the material attains a yellow or orange tint, the black etching-like pictographs are really improved in appearance.

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[1] "Evolution in Art." London, 1895, pp. 7–9.

The animal which furnishes this material is represented in Plate 11, the specimen technically known as *Rosmarus obesus*, Illiger, being most abundant in Bristol Bay.

The walrus tusks are capable of softening and bending, according to Captain Herendeen, a gentleman of considerable experience in the region under discussion. The tusks are divided longitudinally, one tusk usually furnishing four rods, either by sawing or scraping and splitting. The process described below by Mr. Lucian M. Turner, as pursued in former times and with primitive tools, is still practically the same, though accomplished with modern tools purchased at the traders' or obtained from whalers.

During his protracted residence in southern Alaska, Mr. Turner studied carefully the customs of the Eskimo, and for special instruction in some of the arts the natives worked in his presence, thus affording every opportunity desired.

In response to my inquiry regarding the primitive methods of preparing the ivory drill bows, and their subsequent engraving with pictographs, the following communication was kindly sent to me by Mr. Turner.[1] He says:

> The abundance of walrus ivory in the days prior to the advent of Americans (the Russians did not encourage the use of firearms by the natives and stringently prohibited the sale of such weapons except in greatly favored instances) permitted the Innuit to secure the best character of ivory when wanted; hence the selection of a tusk depended entirely upon the want or use to which it was to be applied. Later the best tusks were sold and the inferior qualities retained, as is well shown by the comparison of the older and the more recent implements created from that material.
>
> The tusk selected was rudely scratched with a fragment of quartz, or other siliceous stone, along the length of the tusk until the sharp edge would no longer deepen the groove; the other three sides were scratched or channeled until the pieces of tusk could be separated. Sometimes this was done by pressure of the hand, or effected by means of a knifeblade-shaped piece of wood, on which was struck a sharp blow, and so skillfully dealt as not to shatter or fracture the piece intended for use. The other side, or slabs, were removed in a similar manner.
>
> The piece intended for drill bow or other use was now scraped (rubbed) with a fragment of freshly broken basalt, in which the cavities formed additional cutting edges and aided in the collection of the bone dust. When this was explained to me, I suggested the use of water, but the native (Innuit) smiled and continued his work. I soon saw he knew better than I how to reduce the size of a strip of walrus ivory. This attrition of the surface was continued until the approximate size was reached. The holes or perforations in the ends were produced by means of stone drills after a depression had been made by an angular piece of stone, any stone capable of wearing away the ivory substance. A few grains of sand were put into the shallow cavity and the stone drill started by means of another drill or by a string or thong similar to the manner in making fire.
>
> Various sizes of stone drills were made, and by their use the different holes were produced. It is unusual to find two perforations of the same diameter in any object. These stone drills were used in making the long holes in ivory objects of all kinds.
>
> The final smoothing of the surface of the ivory piece was effected by rubbing it against a fine-grained stone or in the hand where fine sand was held; lastly, two pieces of ivory were rubbed against each other and thus a polished surface produced.

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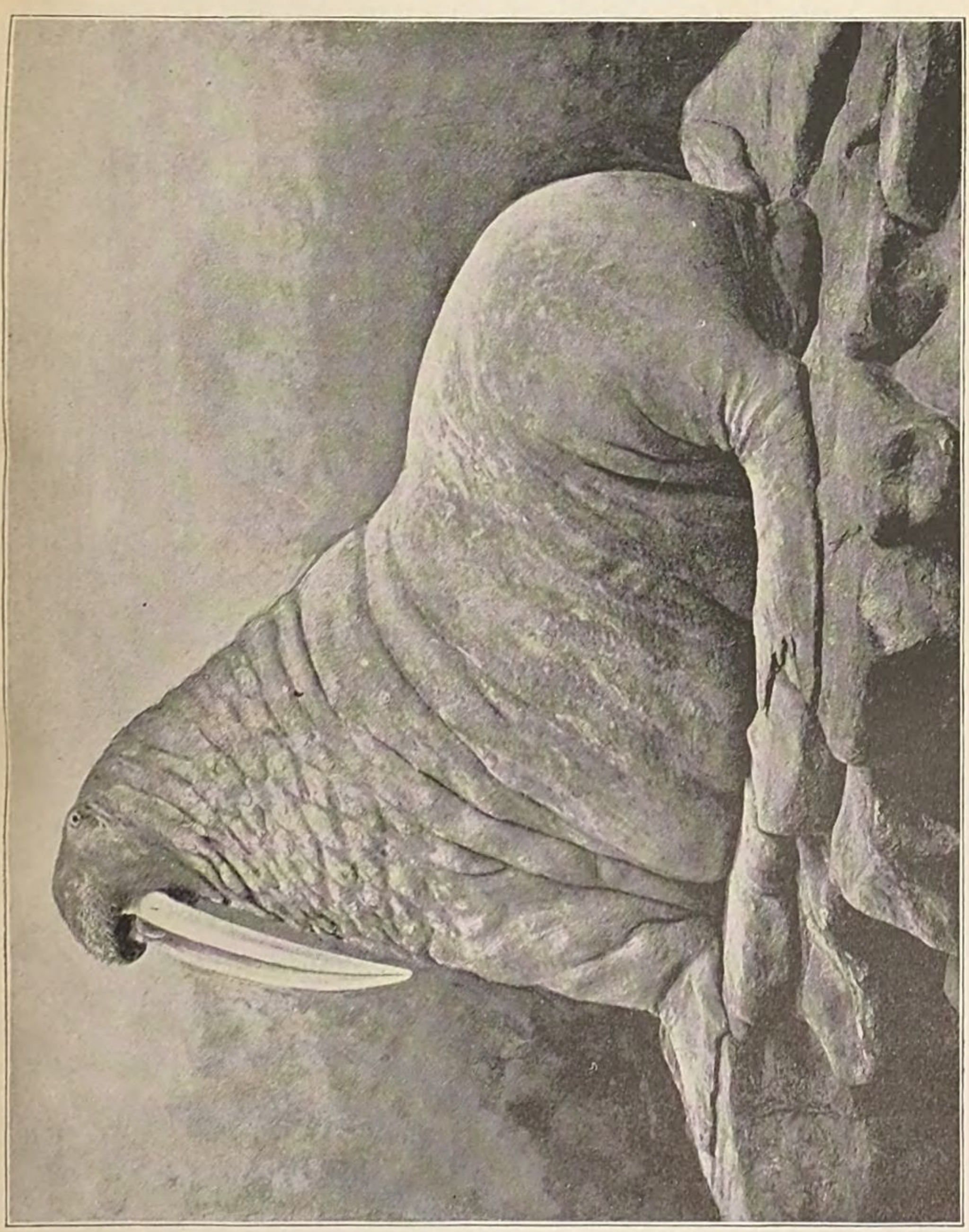
[1] Letter dated December 26, 1894.



WALRUS. (*Rosmarus obesus*, Illiger.)

The etching was done with sharp edges of fragments of flint. Sometimes these stone fragments were skillfully fastened into a piece of wood and used as gravers or even as lancets. In later years files and saws were used to cut the ivory into the required shape, and pieces of steel were used to make the holes. Often a three-cornered file was the instrument used to make the holes.

The drill bow or other implement or utensil was not produced in a day or even in a month, as these articles were usually created for personal use. I have known of such articles being taken along while on a protracted hunting expedition and there worked upon to while away the oftentimes tedious hours of watching game. Again I have known when a native had requested a friend to etch some design, and in their festivals, commemorating their dead, these articles were often presented and highly cherished as gifts. Other articles of ivory often passed as a legacy from a relative to another, and highly valued by the owner.

With respect to the walrus ivory and antler, both of which are employed by the engraver for the portrayal of various figures, Mr. Turner writes:[1]

You will observe many of the larger objects of ivory and antler have outer or engraved portions of herder substance than the inner or core portion. You will perceive that in bent or curved affairs the outer part is always the denser portion of the material. This or these substances warp or curve because of their unequal density of parts. The native saw that heat would unshape a straight piece of ivory or antler, and, taking advantage of what the sun did, he laid aside the piece where it would become moist, and then placed it before the fire, core next to the fire, and warping was the result.

In the winter the heat of the sun was not sufficient to produce harm, but when the warm rays began to heat objects, the native was careful to put his ivory or bone implements of the chase in the shade of a house or on the side of his cache, or within a place where heat could not affect it.

I never saw them dip any such object in hot water or try to bend it by force.

The absence of graphic art among the Eskimo of Greenland, Labrador, and the region between Hudson Bay and the Mackenzie River, can not entirely be attributed to the lack of horn, bone, and walrus ivory, as one or more of these materials appear abundant in certain localities. By graphic art as here named is not intended the ordinary ornamentation by means of lines, dots, etc., nor the sketches on paper referred to by Doctor Rink, but the etchings upon the several materials by means of gravers, to portray graphically records of hunting expeditions, shamanistic ceremonies, and other subjects of which numerous examples are here given passim. The great supply of ivory in Alaska comes from near Port Muller, in Bristol Bay, and the more northern coast and islands. Mr. Dall, who is authority for this statement, adds, furthermore, "that the amount of walrus ivory taken annually will average 100,000 pounds."[2]

Some of the utensils in the National Museum are made of fossil ivory; and of this to Mr. Dall remarks, "that it is not uncommon in many parts of the valleys of the Yukon and Kuskoquim. It is usually found on the surface, not buried as in Siberia, and all that I have seen has been so much injured by the weather that it was of little commercial

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[1] Letter dated March 18, 1896.

[2] "Alaska and its Resources." Boston, 1870, p. 504.

value. It is usually blackened, split, and so fragile as to break readily in pieces. It has also been found on the shores of Kotzebue Sound and the Arctic coast."[1]

Captain William Edward Parry,[2] during his second voyage for the discovery of a northwest passage, found the walrus in tolerable abundance in latitude 68° 22′ 21″ north, and longitude (by chronometer) 81° 56′ 55″ west, which places the locality on the east coast of Melville Peninsula. He remarks:

> In the course of this day the walruses became more and more numerous every hour, lying in large herds upon the loose pieces of drift ice; and it having fallen calm at 1 p. m., we dispatched our boats to endeavor to kill some for the sake of the oil which they afford. On approaching the ice, our people found them huddled close to, and even lying upon, one another, in separate droves of from twelve to thirty, the whole number near the boats being perhaps about two hundred. Most of them waited quietly to be fired at, and even after one or two discharges did not seem to be greatly disturbed, but allowed the people to land on the ice near them, and, when approached, showed an evident disposition to give battle. After they had got into the water, three were struck with harpoons and killed from the boats. When first wounded, they became quite furious, and one which had been struck from Captain Lyon's boat made a resolute attack upon her and injured several of the planks with its enormous tusks.

The author above cited mentions, furthermore, the occurrence of reindeer and musk ox, both species of animals furnished with horns that might readily furnish excellent materials upon which to inscribe pictorial representations of exploits or events. Great abundance of the former are killed in the summer time, "partly by driving them from islands or narrow necks of land into the sea, and then spearing them from their canoes, and partly by shooting them from behind heaps of stones raised for the purpose of watching them, and imitating their peculiar bellow or grunt. Among the various artifices which they employ for this purpose, one of the most ingenious consists in two men walking directly from the deer they wish to kill, when the animal almost always follows them. As soon as they arrive at a large stone, one of the men hides behind it with his bow, while the other, continuing to walk on, soon leads the deer within range of his companion's arrows. They are also very careful to keep to leeward of the deer, and will scarcely go out after them at all when the weather is calm."[3]

HORN.

Quite a number of specimens of Eskimo workmanship, upon which both simple forms of ornamentation and pictographic records occur, consist of pieces of reindeer horn, obtained from the Barren-ground caribou or reindeer, shaped into the form desired for the purpose. In plate 12 is reproduced a museum group of Woodland caribou (*Rangifer*

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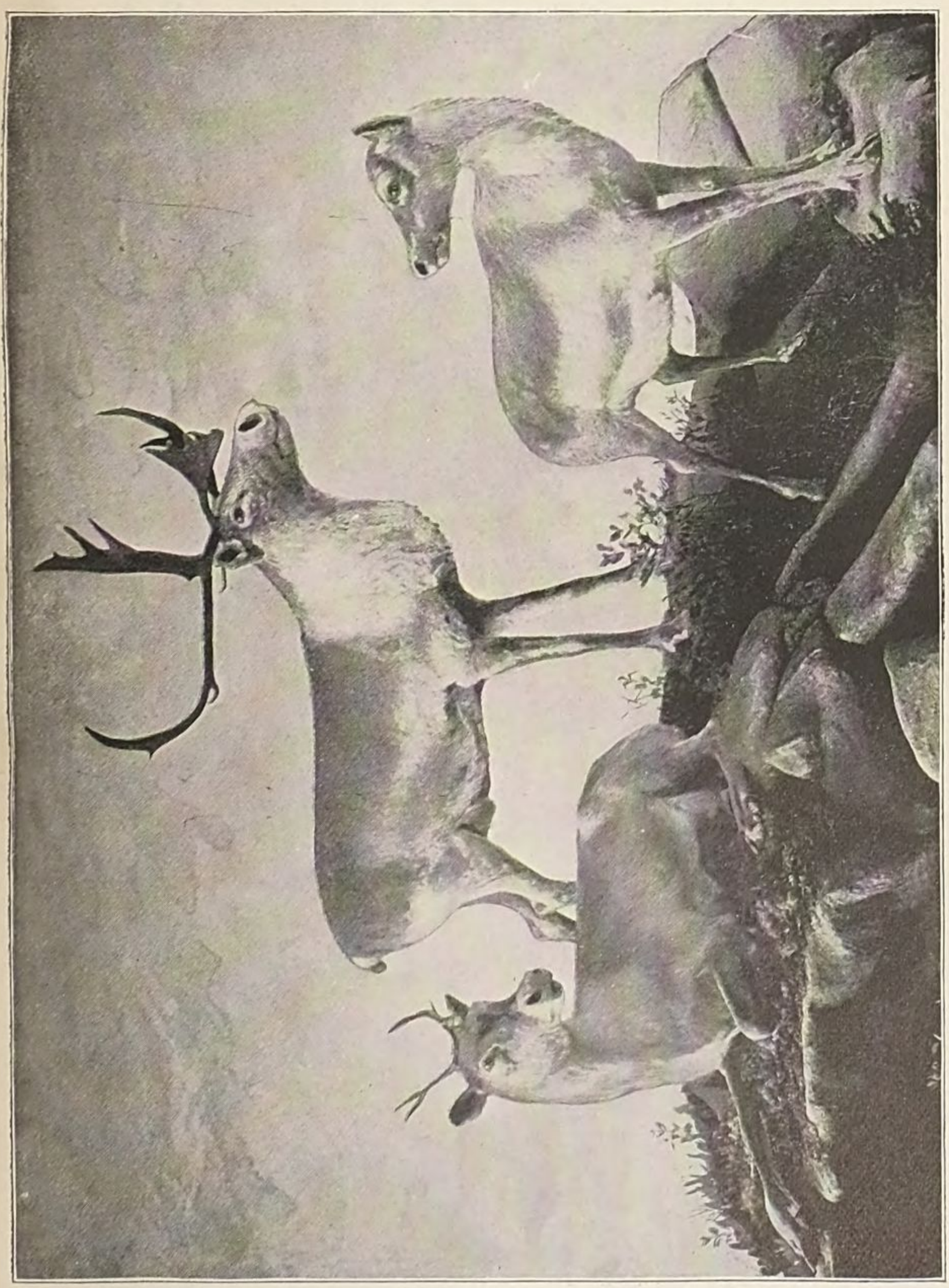
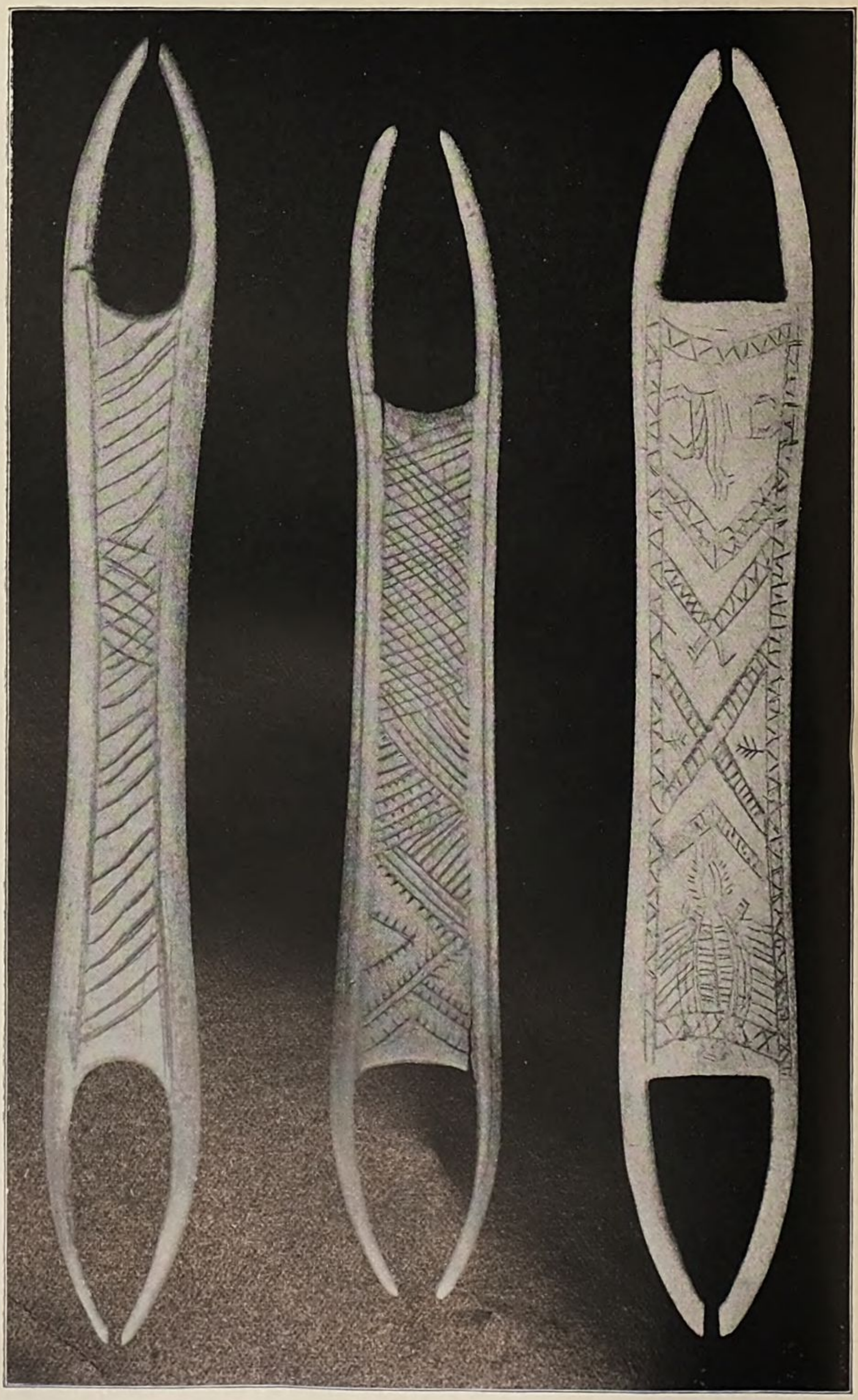
[1] "Alaska and its Resources." Boston, 1870, p. 479.

[2] The Journal of a second voyage for the discovery of a northwest passage from the Atlantic to the Pacific. London, 1824, p. 220.

[3] Idem, pp. 420, 421.



REINDEER, OR WOODLAND CARIBOU. (*Rangifer tarandus caribou*, Kerr.)



WEAVING UTENSILS OF HORN.

HUNTING RECORDS OF HORN.

EXPLANATION OF PLATE 14.

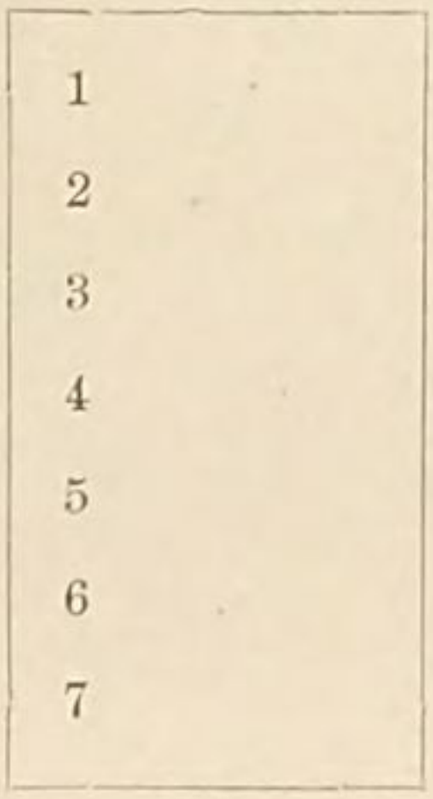


Fig. 1. PICTOGRAPH ON BONE.

(Cat. No. 33315, U. S. N. M. Norton Sound. Collected by E. W. Nelson.)

Fig. 2. RECORD ON BONE.

(Cat. No. 129277, U. S. N. M. St. Michaels. Collected by L. M. Turner.)

Fig. 3. KANTAG OR BUCKET HANDLE OF HORN.

(Cat. No. 37742, U. S. N. M. Northern part of Norton Sound. Collected by E. W. Nelson.)

Figs. 4–7. KANTAG HANDLES OF ANTLER.

Cat. Nos. 33311, 33309, 33312, and 33310, respectively, U. S. N. M. Norton Sound. Collected by E. W. Nelson.)

NATIVE KNIVES.

EXPLANATION OF PLATE 15.

Fig. 1. DECORATED KNIFE HANDLE.
(Cat. No. 45488, U. S. N. M. St. Michaels. Collected by E. W. Nelson.)

Fig. 2. KNIFE WITH IRON BLADE.
(Cat. No. 48536. Kotzebue Sound. Collected by E. W. Nelson.)

Fig. 3. BONE KNIFE.
(Cat. No. 33026, U. S. N. M. Norton Sound. Collected by E. W. Nelson.)

Fig. 4. IVORY KNIFE.
(Cat. No. 36576, U. S. N. M. Chalitmut. Collected by E. W. Nelson.)

DANCING MASK OF WOOD.

EXPLANATION OF PLATE 16.

DECORATED DANCING MASK. Used by shamans in ceremonials. It is made of wood, painted white, and ornamented with pictures of masks, and with feathers.
(Cat. No. 64258, U. S. N. M. Kuskokwim. Collected by E. W. Nelson.)

tarandus caribou Kerr), a variety found farther south than the Barren-ground variety, which is believed to be the one best known to the Alaskan Eskimo. Several utensils employed in net weaving are shown in plate 13, figs. 1, 2, 3, and several short, stout slabs of horn, neatly ornamented with animals and short records of hunting exploits, are represented in plate 14, figs. 2–7.

No specimens of horn of either the mountain sheep or the mountain goat, both of which are employed by various other and more southern coast tribes, have as yet been found in the collection of either the National Museum, or that of the Alaska Commercial Company, in San Francisco, California.

BONE.

Another article very often met with, inscribed with various kinds of ornamentation and pictorial work, consists of bone, both the larger bones of the legs and ribs of reindeer, and the humerus of the swan, the latter serving as tubes for needle cases or snuff tubes. Specimens are shown farther on.

A small piece of bone, rudely incised, is shown herewith in plate 14, fig. 1.

Some ornamented bone knives will be referred to under the special class of subjects to which the records pertain. Such weapons are employed in skinning and sometimes in cutting up animals, and native portrayals of such avocations are also reproduced in several illustrations. The handles, and sometimes the blades of such knives, some with steel blades used in working and fashioning the ivory rods and bag handles, are decorated as in plate 15, fig. 1.

WOOD.

Wood is sometimes used for various articles, such as boxes for tobacco, small utensils and tools, and women's trinkets. These are frequently incised, but the ornamentation is limited to simple figures composed of straight lines, and perhaps dots.

In the country of the Magemuts—who inhabited the vicinity of Cape Romanzoff and reach nearly to the mouth of the Yukon River—wood is reported as very scarce, and is an article of trade.[1]

Wood is sometimes used for ornaments, masks, and toys, the surface of which may be whitened, and upon this other designs are portrayed. Such an instance is shown in plate 16, consisting of a dancing mask.

The Greenland map, before mentioned, may also be noted in this connection.

The only other examples in the collections of the National Museum are from Point Barrow, and may here be reproduced, together with the descriptions given by Mr. Murdoch:

This consists of a toy obtained in Point Barrow and deposited in the

[1] "Alaska and its Resources." Boston, 1880, p. 407.

National Museum. It is a child's toy, resembling what American boys would call a "buzz" toy, and which would by them be made of the round tin top of a shoeblacking box.

The specimen herewith reproduced in fig. 1 is of pine wood, rather

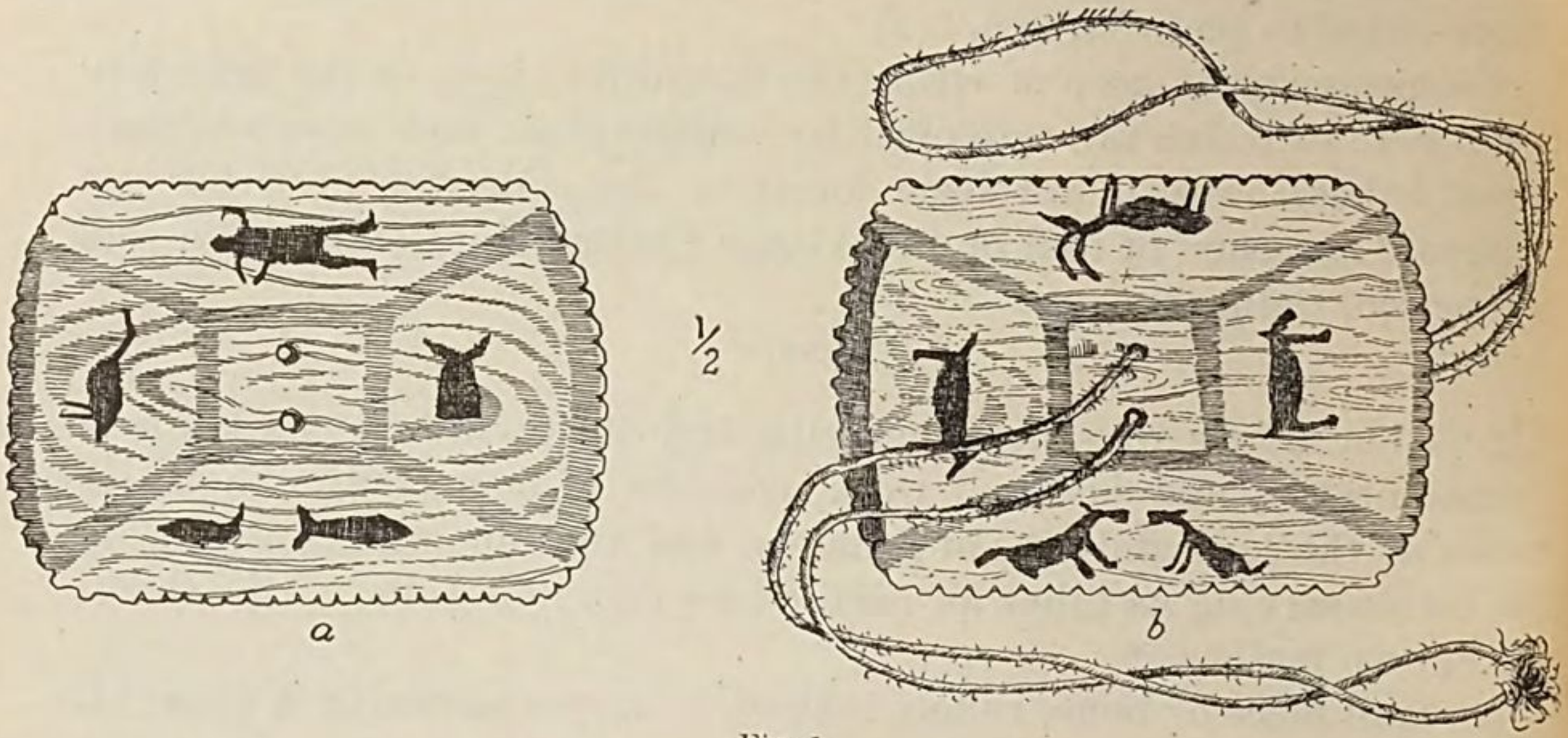


Fig. 1.

WOODEN "BUZZ" TOY. POINT BARROW.

oblong in shape, and through the two perforations in the middle are passed the ends of a sinew cord. The specimen is about 3.5 inches in length. One end has a border of black on both faces, while the other has a similar border of red. The middle square, 1 inch across, is

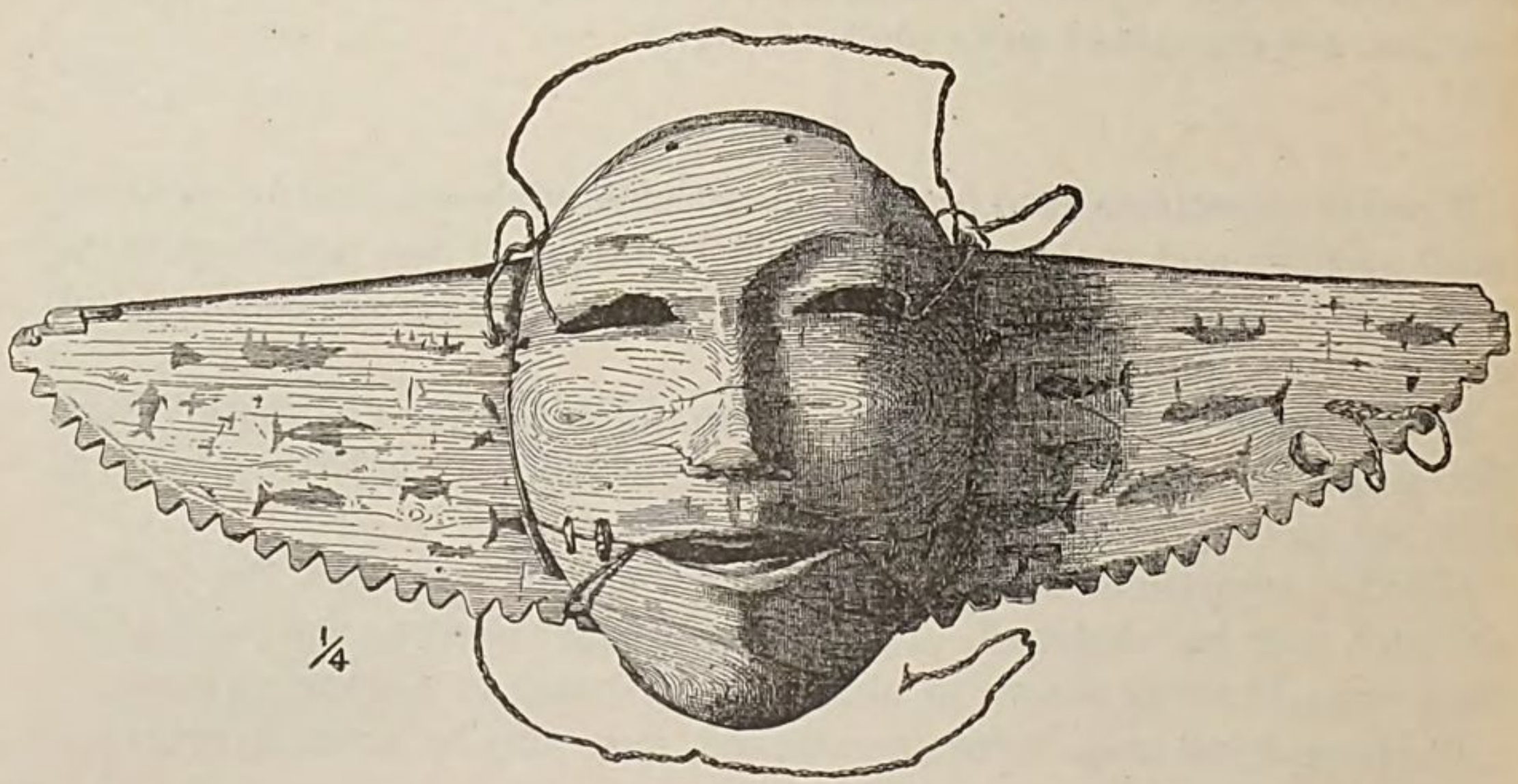


Fig. 2.

WOODEN MASK AND DANCING GORGET.

also in red, and from the corners are lines extending out to the respective corners of the tablet. The compartments thus formed are ornamented with figures of various objects. On the left end face of the illustration *a* is a goose; the next at the top is a man with one hand

elevated and the other apparently so curved as to pretend to touch himself, indicating that he is contemplating something or has performed some deed; the third space contains the conventional figure of a whale's tail to indicate that animal, and in the remaining space, at the bottom, is a whale with what appears to denote a float attached to a harpoon line.

The other side of the tablet, that bearing the cord, has in the left-hand space an animal probably intended to denote a wolf; the upper panel has within it a deer, the horns being turned back, whereas to denote the reindeer they would be turned forward; the next, like the first, appears to be a wolf, while the fourth has two animals seated upon their haunches, facing one another, after the manner of dogs, although they appear to closely resemble the first and third, which are believed to denote wolves, as before stated.

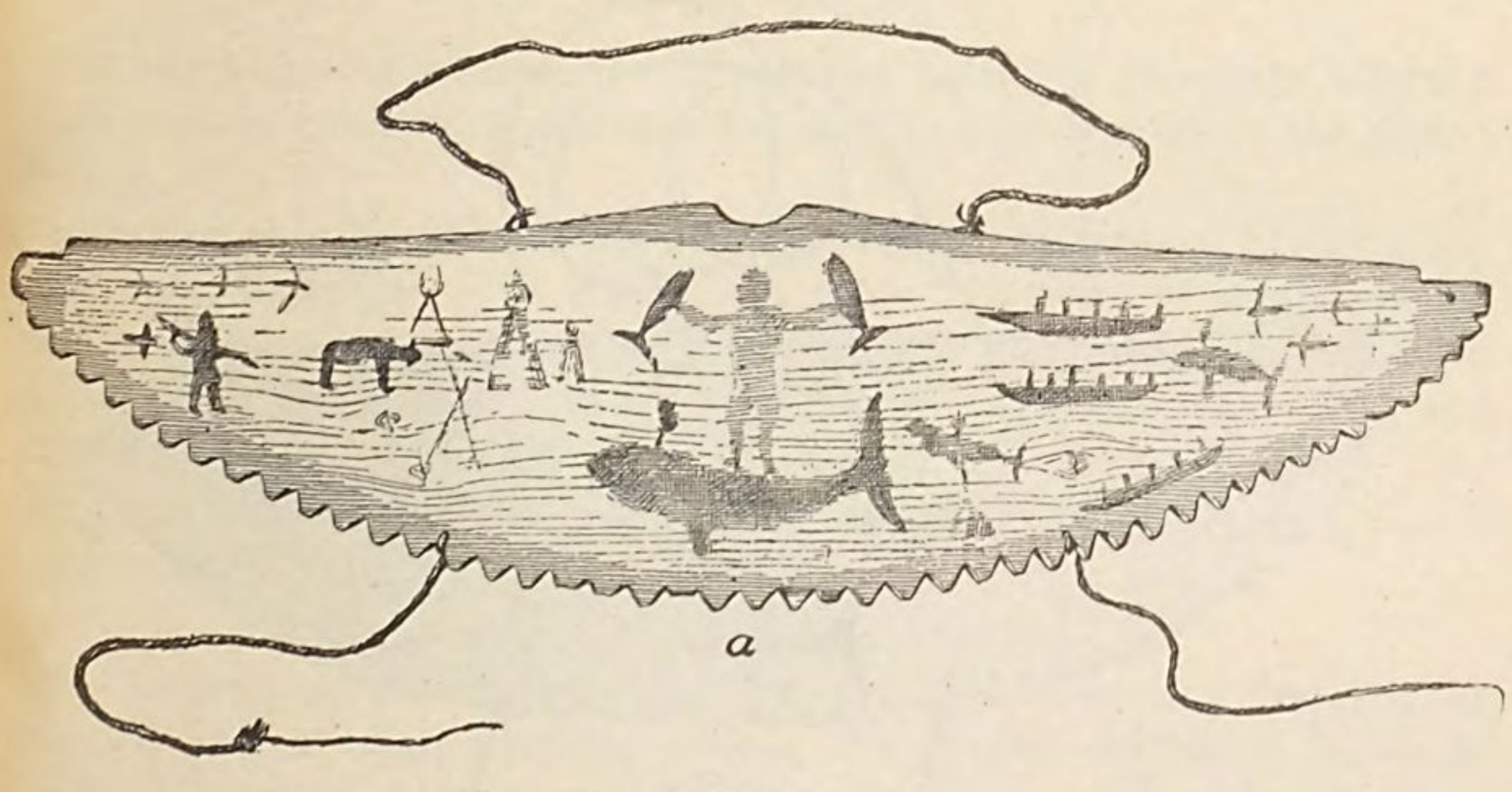


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Fig. 3.

DANCING GORGET OF WOOD; FROM POINT BARROW.

An old and weatherworn mask from Point Barrow is shown in fig. 2. It is made of spruce wood, and measures 7½ inches in length. It is peculiar in having the outer corners of the eyes somewhat depressed, and in addition to the mustache and imperial has a broad "whaleman's mask" drawn with black lead across the eyes.

Mr. Murdoch[1] says of the specimen that "this mask has been for a long time fastened to an ornamented wooden gorget, and appeared to have been exposed to the weather, perhaps at a cemetery. The string is made of unusually stout sinew braid."

A decorated gorget is shown in fig. 3. It is from Point Barrow, and Mr. Murdoch[2] describes it thus:

> It is made of spruce, is 18.5 inches long, and has two beckets of stout sinew braid, one to go round the neck and the other round the body under the wearer's arms.

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[1] Ninth Annual Report of the Bureau of Ethnolgy for 1887–88, 1892, pp. 367, 368, *fig. 367.*

[2] *Idem*, p 370, fig. 372a.

The figures are all painted on the front face. In the middle is a man painted with red ocher; all the rest of the figures are black and probably painted with soot. The man with his arms outstretched stands on a large whale, represented as spouting. He holds a small whale in each hand. At his right is a small cross-shaped object which perhaps represents a bird, then a man facing toward the left and darting a harpoon with both hands, and a bear facing to the left. On the left of the red man are two umiaks with five men in each, a whale nearly effaced, and three of the crow-shaped objects already mentioned. Below them also, freshly drawn with a hard, blunt lead pencil or the point of a bullet, are a whale, an umiak, and a three-cornered object the nature of which I can not make out.

A similar gorget, from the same place, is shown in fig. 4, and appears to have been long exposed to the weather, perhaps at a cemetery, as the figures are all effaced except in the middle, where it was probably "covered by a mask as in fig. 2, which was from the same village."

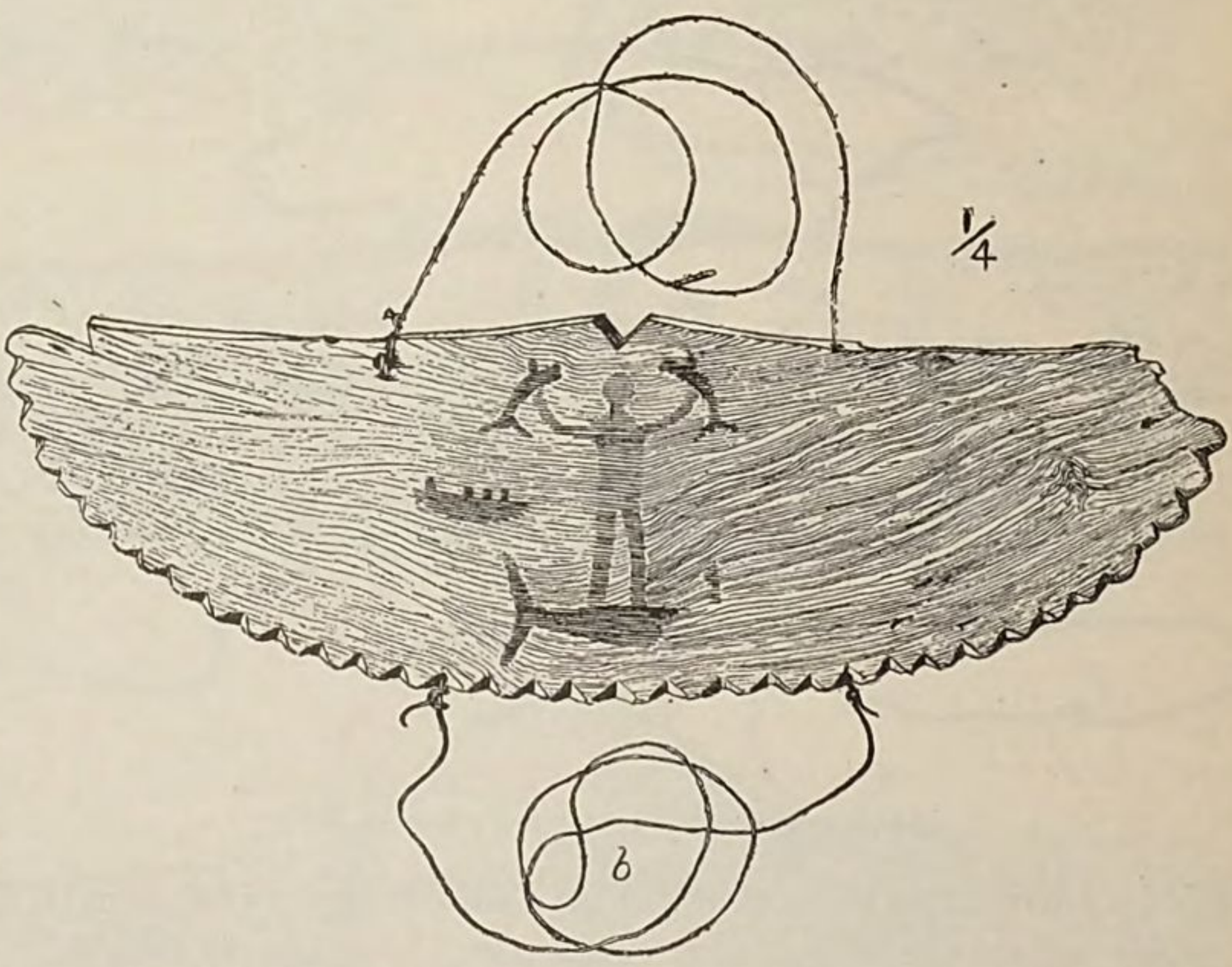

Fig. 4.

DANCING GORGET OF WOOD; FROM POINT BARROW.

Mr. Murdoch says of this that "there seems to have been a red border on the serrated edge. In the middle is the same red man as before standing on the black whale and holding a whale in each hand. At his right is a black umiak with five men in it, and at his left a partially effaced figure which is perhaps another boat." The strings are for securing the gorget to the dancer's neck and body.

Mr. Murdoch[1] remarks of the human figure holding the whales: "This man or giant, able to hold out a whale, appears to be a legendary character, as we have his image carved in ivory. We unfortu-

[1] Ninth Annual Report of the Bureau of Ethnology for 1887–88, 1892, p. 371.

nately did not succeed in learning anything more about him, except that his name (apparently) was 'Kikamigo.'"

"These gorgets appear to have gone out of fashion," continues the above-named author, "as we saw none which were not very old, or which appeared to have been used recently."[1]

METALS.

Copper, brass, and white metal (consisting of block tin, lead, etc.), as well as an occasional specimen of iron, will be met with bearing rude designs in ornamentation. Very little is done also in silver, especially in the manufacture of bracelets, an art which was imported from the Thlinkit, who, in turn, obtained their first suggestions and patterns from the Haida Indians. Mr. Murdoch reports the practice of engraving iron-pipe picks and flint steels at Point Barrow.

SKINS OF ANIMALS.

Tanned hides of walrus are sometimes used for purposes where a touch here or there of ornamentation seems to be desired by the native Eskimo.

Reindeer skin and the small peltries used for articles of clothing are sometimes decorated with designs in color by means of small wooden tools resembling spoons, of which the back of the bowl is cut into patterns, which are then moistened with the pigments or stains, and finally impressed upon the skin or fabric. This process is very like that practiced by the South Sea Islanders in decorating some forms of tapa cloth.

TATTOOING.

The human skin is also used for the portrayal of various designs, the practice of tattooing varying among the several tribes or bands of Eskimo between Alaska and Greenland. Plate 4 represents a Port Clarence girl with typical tattooing upon the chin. In the female the designs are usually limited to such vertical bars upon the chin. On Plate 22, fig. 7, is also shown tattooing by pictography upon a carved face.

Referring to the Eskimo of Melville Peninsula, Captain Parry[2] remarks:

> Among their personal ornaments must also be reckoned that mode of marking the body called tattooing, which, of the customs not essential to the comfort or happiness of mankind, is perhaps the most extensively practiced throughout the world. Among these people it seems to be an ornament of indispensable importance to the women, not one of them being without it. The operation is performed about the age of ten or sometimes earlier and has nothing to do with marriage, except that, being considered in the light of a personal charm, it may serve to recommend them as wives. The parts of the body thus marked are their faces, arms, hands, thighs, and in some few women the breasts, but never the feet, as in Greenland.

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[1] Ninth Annual Report of the Bureau of Ethnology for 1887–88, 1892, p. 372.

[2] The journal of a second voyage for the discovery of a northwest passage from the Atlantic to the Pacific. London, 1824.

The operation is very expeditiously managed by passing a needle and thread, the latter covered with lamp black and oil, under the epidermis, according to a pattern previously marked out upon the skin. Several sketches being thus taken at once, the thumb is pressed upon the part, while the thread is drawn through, by which means the coloring matter is retained and a permanent dye of a blue tinge imparted to the skin.

In the absence of needles, says the author, a strip of whalebone is used as a substitute. It is furthermore stated that the patterns "are nearly the same in all," and that "a little of this kind of mark is on the back part of their hands; and with them we understood it to be considered as a souvenir of some distant or deceased person who had performed it."

Marks of distinction by tattooing are employed by the men to denote success in whaling. "Those men who are or have been captains of whaling umiaks that have taken whales have marks tattooed somewhere on their person, sometimes forming a definite tally."[1]

Mr. Murdoch refers to an example in the person of a native named Añoru, who had a broad band tattooed across each cheek, extending from the corner of the mouth backward toward the lobe of the ear. These bands were made up of many indistinct lines, which were said to indicate "many whales." Another instance was that of a native who "had the 'flukes' of seven whales in a line across the chest."

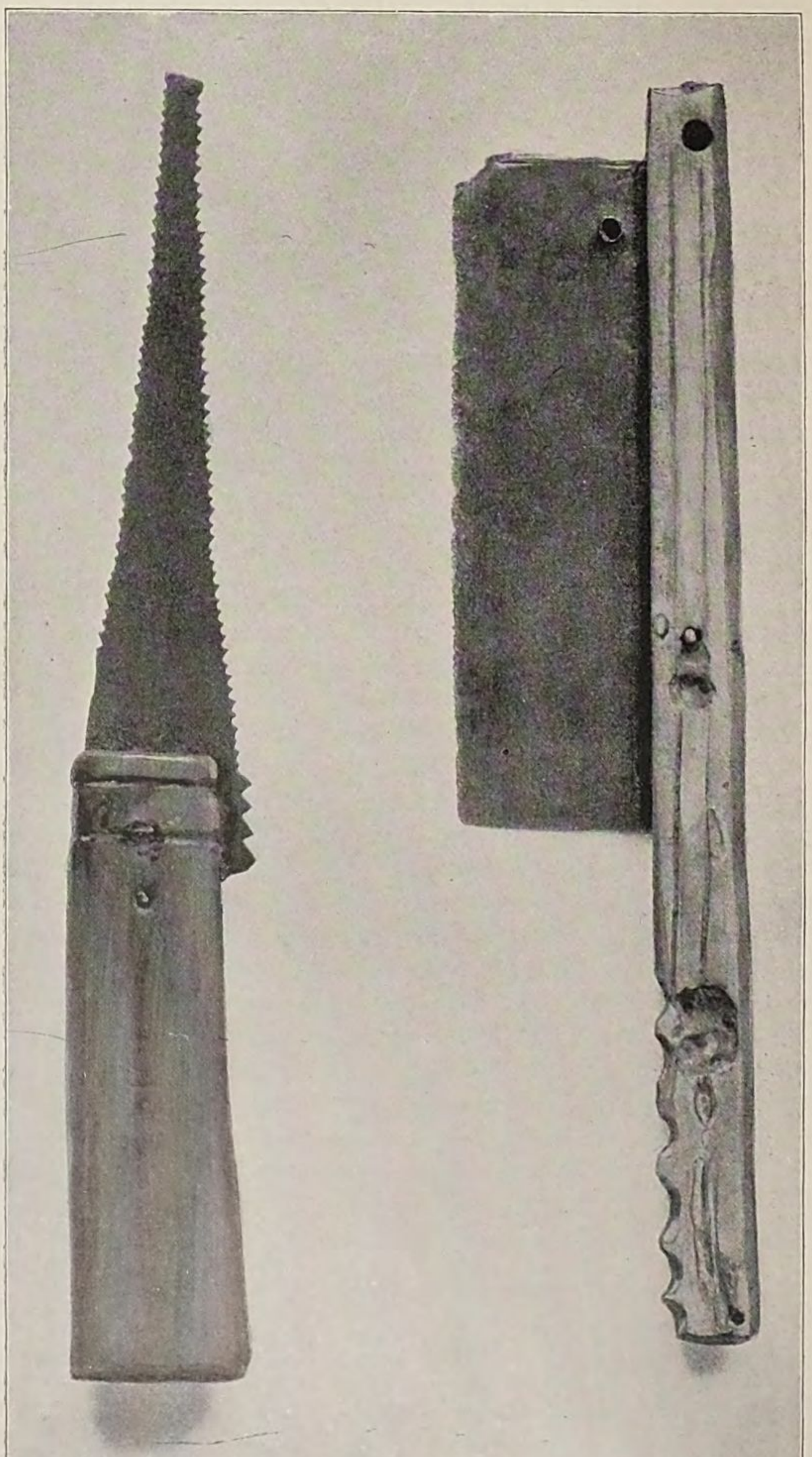
The wife of the former "had a little mark tattooed on each corner of her mouth, which she said were 'whale marks,' indicating that she was the wife of a successful whaleman."[1]

McClure notes that at Cape Bathurst he observed that a successful harpooner had a blue line drawn across the bridge of the nose,[2] and, according to Armstrong, he has a line tattooed from the inner angle of the eye across the cheek, a new one being added for every whale he strikes.[3] Father Petitot remarks that in this region whales are "scored" by "tattooing crosses on the shoulder, and that a murderer is marked across the nose with a couple of horizontal lines."[4] It is interesting, says Murdoch, that one of the "striped" men at Nuwŭk told us he had killed a man. In east Greenland tattooing is similarly performed. Holm, remarking, in reference to the residents at Angmagralik, that "Mændene ere kun undtagelsvis tatoverede og da kun med enkelte mindre Streger paa Arme og Haandled. for at Kunne harpunere godt."[5]

INSTRUMENTS AND COLORS.

Various instruments are employed by the Eskimo in preparing for the reception of pictographs the several substances used for that purpose. The pigments are now chiefly obtained from the trader,

[1] Ninth Annual Report of the Bureau of Ethnology, 1887–88, 1892, p. 139.
[2] Discovery of Northwest Passage, p. 93.
[3] Personal Narrative, p. 176.
[4] Monographie, etc., p. xxv.
[5] Geogr. Tidskrift VIII, p. 88.



SAWS FOR CUTTING IVORY.

EXPLANATION OF PLATE 17.

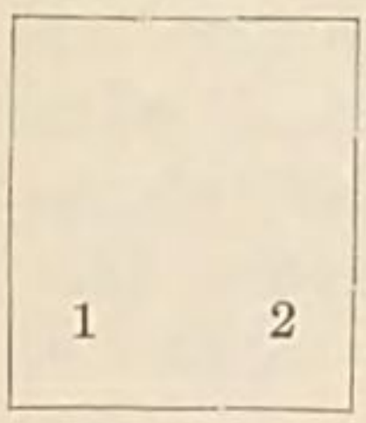


Fig. 1. SAW.

(Cat. No. 46145. Port Clarence. Collected by T. H. Bean.)

Fig. 2. SAW.

(Cat. No. [1304]. Anderson River. Collected by C. P. Gaudet.

though in former times they were prepared from mineral and vegetable substances.

Plate 17 represents two saws used in cutting ivory. The specimen shown in fig. 1 is from Port Clarence, and appears to be made of a piece of a steel saw of American manufacture, but from the appearance of the specimen the teeth were filed into it by the native. It is hafted to a piece of ivory and secured by means of a piece of metal. apparently a nail.

Plate 17, fig. 2, represents a saw of a thinner piece of metal with a very irregularly filed cutting edge. It is attached to a piece of ivory, and was obtained at Anderson River. This instrument was used in splitting walrus tusks lengthwise, as well as cutting them into shorter pieces when necessary. In the bone or ivory comb represented in Plate 22, fig. 4, may be seen the effects of native sawing and an attempt to make teeth.

Several forms of knives before referred to are illustrated in plate 15. The upper left-hand figure (fig. 1) is a wood-working knife, obtained at St. Michaels, and sent to the Museum by Mr. E. W. Nelson. The handle is made of a rib, a slot in the forward end being made there to receive the laterally curved blade, and in this respect resembling to a limited degree the type used by most of the Indians of the Great Lakes. The blade is secured by means of a thong.

Upon the back or obverse side of the handle is a depression one-eighth of an inch deep and five-sixteenths of an inch in diameter, which shows ample evidence of having been used in holding a fire drill, or some other variety of drill. Upon the front side of the handle appears the outlines of three sailing vessels, immediately behind the right-hand figure being a pit surrounded by a circle with four radiating lines, beyond which are indications of an attempt to make other concentric circles.

These knives are used in fashioning wood into various forms, and also, sometimes, in shaving the roughened edges of ivory rods.

The specimen at the upper right hand (fig. 2) is from Kotzebue Sound. The handle, like the preceding, is made of a rib, while the arrow-shaped piece of metal constituting the blade is secured by means of two rivets, one of iron and one of copper, while the anterior, a third one, has fallen out, leaving only the perforation.

The cutting edge is slightly concave from point to base and may have been made so intentionally for the purpose of causing slight convexity to the surface operated upon. This style of knife is also sometimes employed in shaving down ivory rods to the desired form and thickness.

The third specimen (fig. 3) was obtained at Norton Sound. This bone gouge or chisel represents the type of tool used for stripping off birch bark for canoes before the iron tools were introduced. It is apparently made of the leg bone of a reindeer and bears ornamentation of peculiar interest. The transverse bars consist of parallel lines by twos, and

several times by threes, between which is the alternating dentate pattern, the result of the interlacing, or alternate approximation, of points, the intervening surface resulting in a fine zigzag pattern. The simple zigzag lines occur near the middle of the specimen, while the small lateral ornaments resembling bird tracks are conventional tree patterns.

The incisions are all stained with what appears to be red ocher. Total length is $12\frac{3}{16}$ inches; has a sharp cutting edge and shows evidence of much use.

The ivory snow knife (fig. 4) was collected by Mr. E. W. Nelson at the Chalitmut village, and occupies the bottom place on plate 15. The specimen is $14\frac{1}{8}$ inches in length and $1\frac{11}{16}$ inches across the widest part of the tolerably sharp blade. The bottom of the handle is ornamented with seven projections representing seal heads, the eyes and mouth of each being clearly cut and blackened. Along the top or back of the blade are three parallel creases, crossed at intervals by short lines. The upper edge of each side of the blade has two parallel lines extending from the base to near the tip, from the lower one of which extend short ⩽ shaped ornaments resembling the legs on some of the Eskimo mythic animals. The line, extending almost halfway along the bottom edge of the blade, has single short lines projecting backward, at a slight angle, at intervals of about half an inch apart. This is a simpler form of ornament, though of the same type as that upon the upper side of the blade.

Along the center, on either side, is a line terminating at the middle of the blade in a circle within which is another and a central perforation filled with a hard wooden peg.

The central line on each side has simple, short, oblique lateral incisions as ornaments, while the outer circle has lines radiating at the cardinal points.

On plate 18 are reproduced three bone skin dressers, figs. 1 and 3 being obtained from the Thlingit Indians, while fig. 2 was secured at Sitka, no specific tribe being referred to in the records accompanying the object.

The ornamentation on plate 18, fig. 1 consists chiefly of three rows of small squares being arranged in order to resemble a checkered surface, the one series of squares being plain while the other is specified by cross lines. At the upper edge, embracing a little more than one-third of the surface, is a longitudinal surface marked by pairs of diagonal lines.

The specimen on plate 18, fig. 2, has most of the surface of one side divided off into three rectangles, all but one of the lines forming the boundaries, being decorated on the inner side by broken series of small triangles. This is a common Eskimo pattern, but has not the opposing fellow so as to form the zigzag. The pattern does not occur on other specimens of like workmanship from the Thlingit Indians, or from Sitka, excepting in the specimen on plate 46, fig. 3, in which two

EXPLANATION OF PLATE 18.

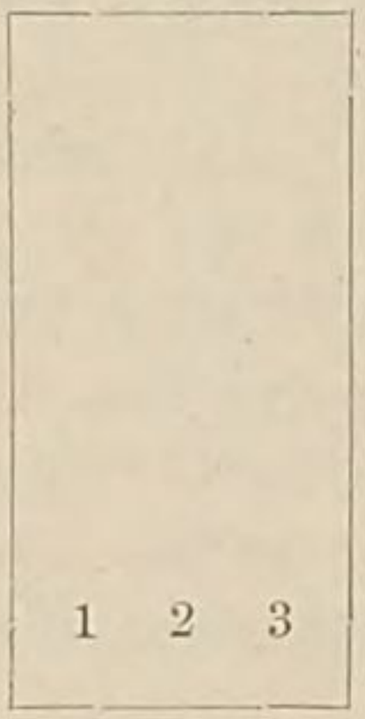


Fig. 1. SKIN DRESSER.

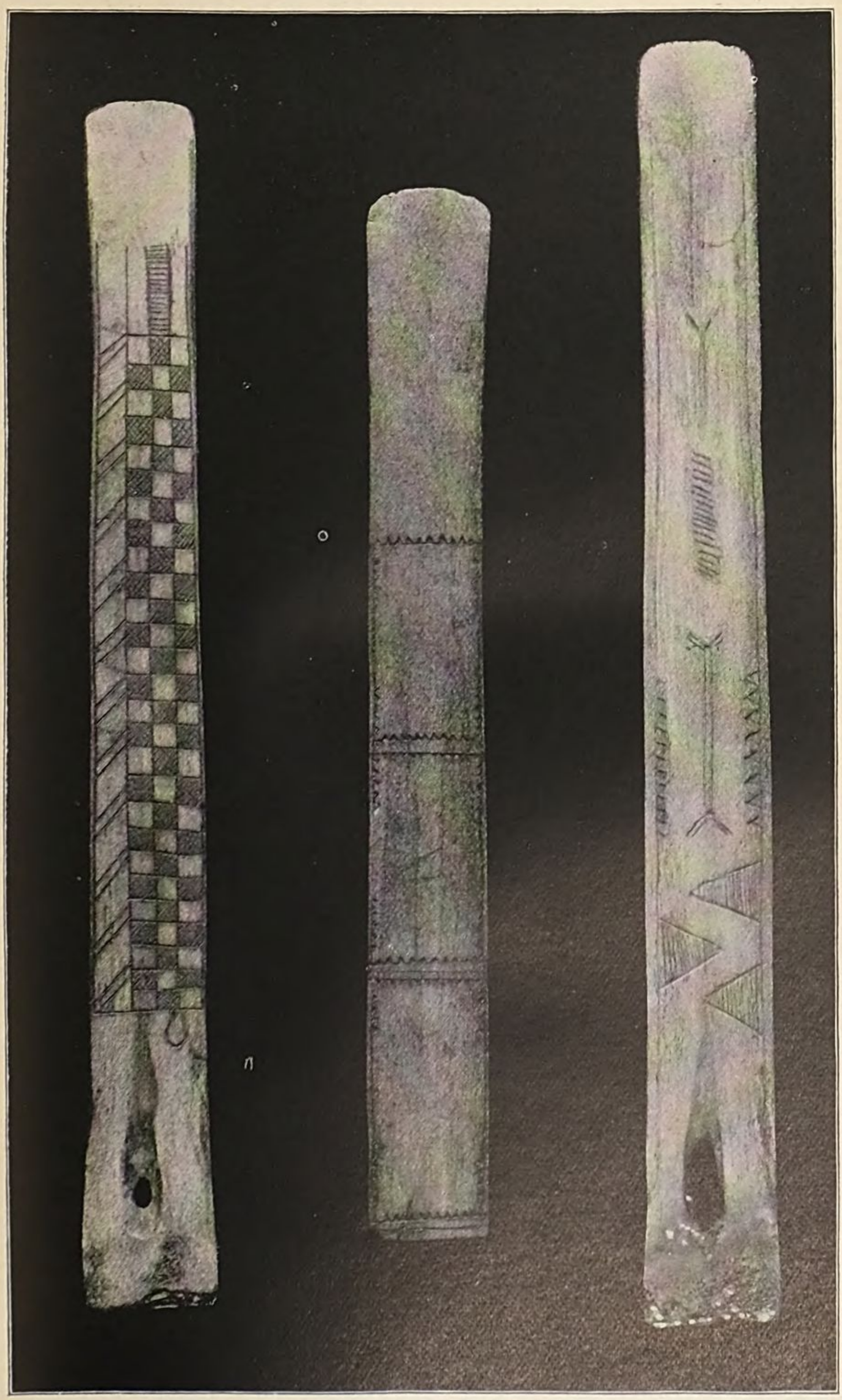
(Cat, No. 168360, U. S. N. M. Thlingit Indians. Collected by Lieut. G. F. Emmons, U. S. N.)

Fig. 2. SKIN DRESSER.

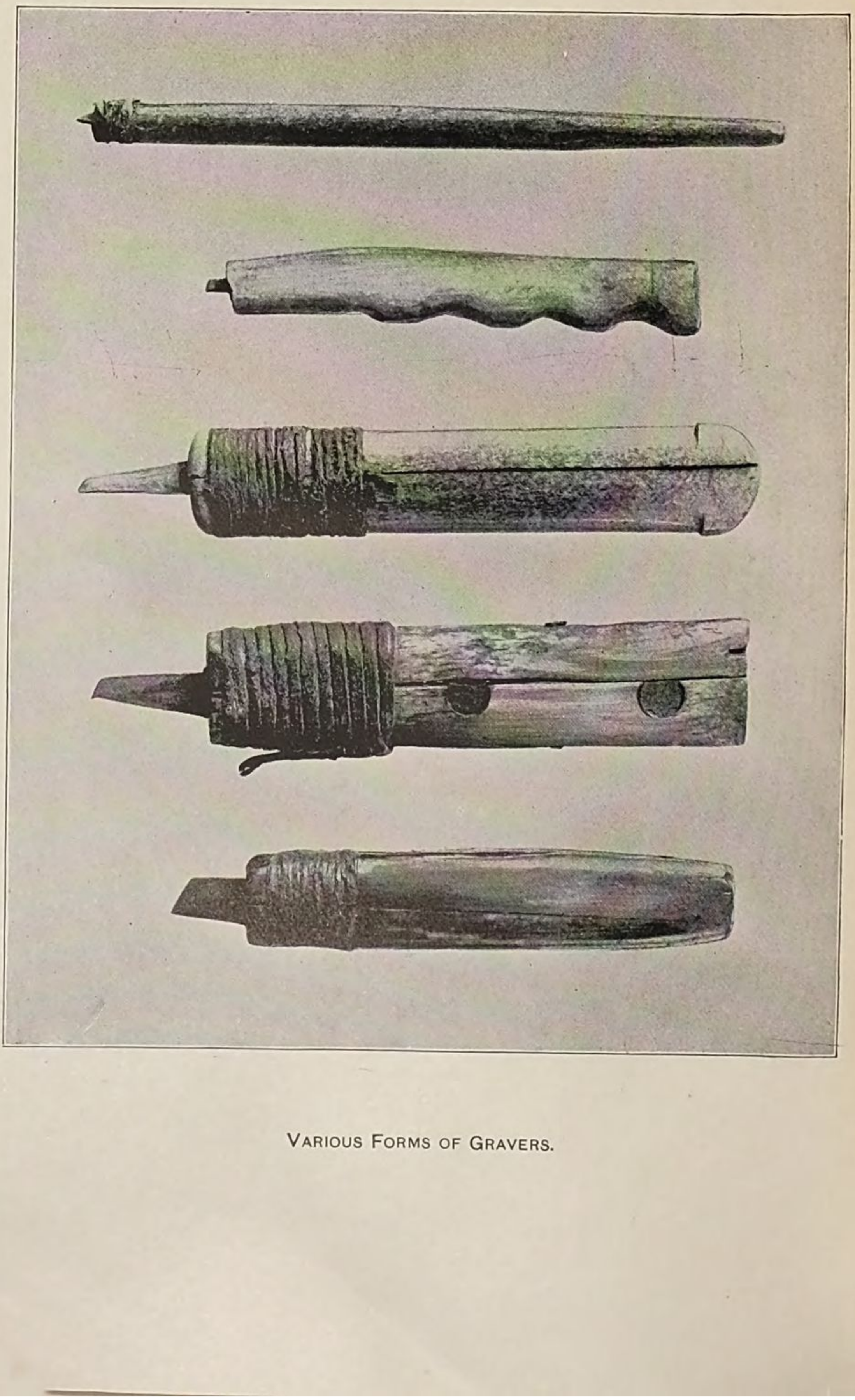
(Cat. No. 74954, U. S. N. M. Sitka. Collected by John J. McLean.)

Fig. 3. SKIN DRESSER.

(Cat. No. 168358. Thlingit Indians. Collected by Lieut. G. F. Emmons, U. S. N.)



BONE SKIN DRESSERS.



VARIOUS FORMS OF GRAVERS.

EXPLANATION OF PLATE 19.

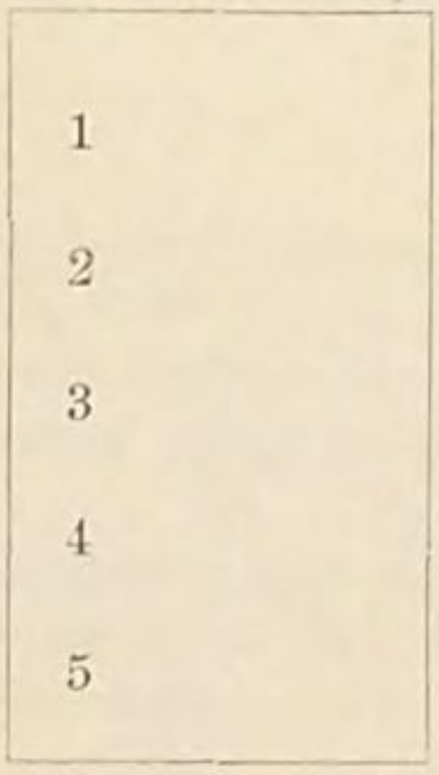


Fig. 1. GRAVER.
(Cat. No. 48549, U. S. N. M. Kotzebue Sound. Collected by E. W. Nelson.)

Fig. 2. GRAVER.
(Cat. No. 2307, U. S. N. M. Anderson River. Collected by R. McFarlane.)

Fig. 3. GRAVER.
(Cat. No. 2094, U. S. N. M. Anderson River. Collected by R. McFarlane.)

Fig. 4. GRAVER.
(Cat. No. 46080, U. S. N. M. Port Clarence. Collected by W. H. Dall.)

Fig. 5. GRAVER.
(Cat. No. 44591, U. S. N. M. Cape Nome. Collected by E. W. Nelson.)

short rows of triangular figures appear near the middle, while at the left are three large triangular patterns placed so as to form a zigzag, or V-shaped, design, this being merely an enlarged illustration of the smaller patterns above noted. At the other end of this specimen is a group of isolated transverse lines; from the middle of the end is issuing a continuous horizontal line, $1\frac{1}{4}$ inches in length, terminating in a bifurcation exactly resembling the common Eskimo conventional tree pattern. In the middle space of the tool is a pair of parallel horizontal lines, also terminating in similar bifurcations; this, however, may be meaningless, though it resembles a doubletree symbol, or it might also be taken as denoting a seine shuttle, examples of which are given in several illustrations.

Mr. L. M. Turner writes:[1]

> Circles are made with a graver; formerly a sharp corner of flint set in a stick. * * * In later days a three-cornered file, one worn out, was substituted, and the manner in which I saw him—an expert ivory worker at St. Michaels—use it was simply pushing it from him, turning the ivory round as the circle was graved, a little deeper at each turn.
>
> The straight decorated lines were made as two deep channels at a suitable width apart; the serrations were made by pushing from the outer edge of the ridge toward the groove. These sculptures are not made in a day, week, or month; many objects are not completed in years, as many of them are life histories of the individual. The Innuit is never in a hurry, and each thinks he has a lifetime before him.

The Kaniags or Kaniaks, the inhabitants of the island of Kadiak and surrounding islands, "are possessed of great skill in carving figures and other objects from walrus tusks, the material being obtained from the Alaska Peninsula." Mr. Ivan Petroff,[2] whose words I am quoting, remarks furthermore:

> They also make very nicely carved snuffboxes of whalebone. Formerly all these objects were worked with stone implements, but the use of iron has long been known to the Kaniags, who used it at the arrival of the Russians. The savages said that iron was occasionally cast upon the beach by the waves [sic!].

Reference has been made to the steel-pointed native-made gravers used in various processes of engraving. In plate 19 are represented five instruments, fig. 1 of which was obtained at Kotzebue Sound by Mr. E. W. Nelson. The handle, a little over 5 inches in length, is made of bone. A slight slot was cut at the large end, into which was inserted a short piece of iron or steel, secured by wrapping with thin cord, apparently of sinew. The point of the instrument is acute, and admirably adapted for etching or scraping.

The second figure from the top (fig. 2) was secured at Anderson River by Mr. R. McFarlane. The bone handle bears indentations, so as to admit of secure grasping. The point of steel is inserted in the end

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[1] Letter dated March 18, 1896.

[2] Report on the population, industries, and resources of Alaska. Tenth Census, 1880, VIII, p. 141.

and filed down to a narrower width than that hidden from view. The point measures $\frac{3}{32}$ of an inch in height and is only about $\frac{1}{64}$ of an inch thick. The front edge is not at right angles to the sides, and thus furnishes a better and sharper cutting edge.

The third or middle specimen (fig. 3) is from the same locality as the preceding. The handle consists of two pieces of bone, so arranged as to unite smoothly and also to hold in place a piece of steel, which has been sunk partly in each half of the handle by means of a slot made by sawing. The two pieces are finally tied together with a sinew cord. The apex of the graver is rather more acute than in the preceding specimen.

The back of the tool is also ground to a cutting edge, to be used in scraping smooth such surfaces requiring treatment previous to engraving.

An interesting specimen occupies the fourth place in the series (fig. 4). This is from Port Clarence, where it was obtained by Mr. W. H. Dall. The two pieces of bone composing the handle are secured to one another by means of a peg passing vertically through them, and two wooden pegs, of no special use apparently, are inserted in handle transversely. Like in the preceding, a slot has been made with the front of each piece so as to secure the flat piece of metal constituting the blade. The point is neatly finished, and it will be observed has a very acute tip turned downward so as to afford the best possible means for fine engraving in hard material. The two pieces of handle are tied together with a leather or skin thong. The entire length is $4\frac{7}{8}$ inches.

The fifth and lower specimen (fig 5) is from Cape Nome, and was secured by Mr. E. W. Nelson. The handle is composed of two pieces of walrus ivory; two pegs pass vertically through them to hold them together, while the broad blade is, as usual, inserted in slots made in both pieces of handle. The wrapping consists of sinew or hide, being so covered with a layer of hard grease and dirt as to prevent identification. The front edge of the instrument is at an angle sufficient to furnish an excellent cutting edge. The entire length is $4\frac{3}{16}$ inches.

In addition to the above remarks concerning the second specimen, it is of interest to call attention to the fact that upon the right-hand side of the handle there occurs a rounded cavity, made with a rude implement, which may have been intended for use in drilling—by steadying the drill at the top. Such depressions and for such purposes are not rare.

Mr. L. M. Turner, Captain Herendeen, and others to whom reference is made elsewhere state that formerly the natives used fragments of flint or quartz with which to engrave and decorate specimens of ivory, bone, and other materials used for utensils and weapons. The small fragments of siliceous material were inserted in the end of wood or bone handles, though sometimes they were large enough to use without the aid of a handle.

After a careful examination of all the engraved specimens of Alaskan

art work, in the collections of the National Museum at Washington, District of Columbia, and the Alaska Commercial Company in San Francisco, California, it appears that the more modern specimens of ivory are engraved in a manner indicating the use of steel-pointed instruments, such as are shown in plate 19. The lines or incisions are frequently very pronounced and represent deep regular channels in which the two sides converge to a sharp cut beneath or at the bottom, resembling a V-shaped groove of elegant uniformity. In the older specimens of ivory carving, such as are very much surface worn by frequent and long continued handling, or have been in the possession of certain individuals and families for a long time, the creases have become less deep, and where they are sheltered by lateral ridges they still indicate an origin of a more primitive kind, being made, perhaps, by less experienced artists or with ruder instruments. The numerous hair-line scratches and frequent apparently accidental slips of the point would indicate the use of a point less acute than the modern steel gravers made by the natives at this day, and which are herewith illustrated.

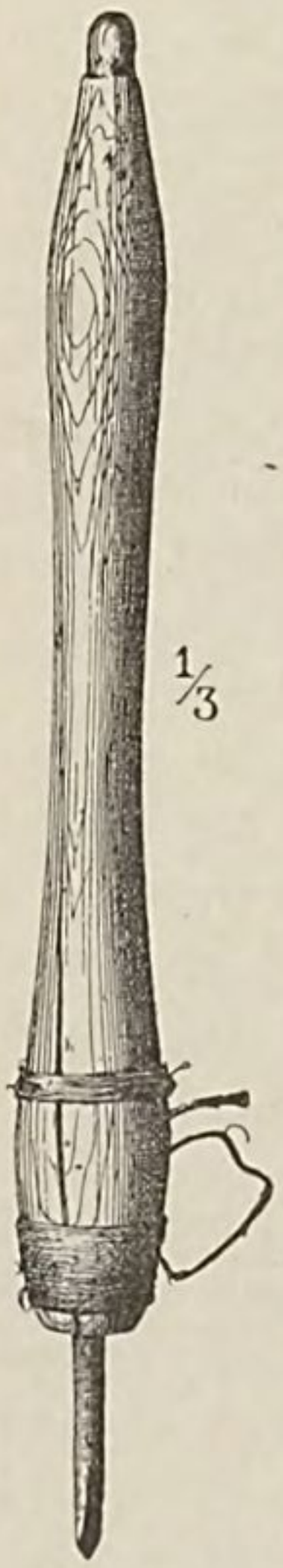
In some of the later engravings the grooves are regular, deep, and pronounced, the cut being sometimes vertical, so as to show the lateral edges at right angles to the horizontal base of the groove, indicating a strong hand pressure of a square cutting edge. The greater number of lines are made, evidently, by using an angle of the graver, the result being similar to that resulting from the use of a variety of the three-sided or triangular graver used in wood engraving.

An examination of the ends of short lines, especially those employed in simple ornamentation, illustrates at once that most of them are made by cutting from the outside toward the main object or body of the design. In this manner the very short lines resemble arrow-headed ornaments or projections, or minute triangles. This is particularly apparent in some of the specimens referred to in connection with conventionalizing and to the art of the Polynesians.

Drills and simple borers appear to have been made by securing to wooden handles rather thin but elongated pieces of chalcedony, or similar siliceous minerals. Slight depressions or pits apparently made by such tools are frequent, and it is probable that before the introduction of metals nearly all perforations in bone, wood, and probably in ivory, were thus made. In larger cavities in bone and ivory, such as would serve for steadying the rear or upper end of a fire-drill during rotation of the latter, the origin thus attributed is often very clear, the rounded cavity, when not yet entirely smoothed off by use, retaining the marks of workmanship made by a crude tool or instrument.

That circles were made by turning the specimen to be engraved and holding firmly the stone-pointed graver and pushing it toward the specimen has been affirmed by one correspondent; but such instances were no doubt rare, and it is believed that no example of a circle, nucleated or otherwise, made in this offhand manner will be found in the extensive collection of the National Museum.

Captain Herendeen states that sometimes a fragment of flint—though generally one of iron or steel and consisting of a narrow strip of perhaps the width of a large nail—was filed at the end so as to receive a V-shaped notch, one point being a little longer than the other. It is well known that pieces of hoop iron, nails, and other articles of iron and steel are similarly employed by our native Indian tribes, and it would indeed be a strange fact if the Eskimo did not seize upon and utilize such a valuable substance as metal when the opportunity was presented, and after having seen sailors and others work them into desired shape by hammering or filing.



1/3

Fig. 5.
DRILL FROM POINT BARROW.

The nuclei of many—I might almost say nearly all—concentric circles are deeper than the circles surrounding them. This may be the result of having the longer point of such a V-shaped notched tool forced deeper into the material to be decorated, giving the instrument a secure point for rotation, so that the outer or cutting end may not so readily slip from its intended course.

In this manner, and for making concentric rings, one such tool would be necessary for each size of circle required. Reference to the various illustrations will elucidate this more clearly.

Accurate measurements of the diameters of circles upon any particular specimens indicate the use of a number of such instruments with different sized bits, and varying distances between the points.

1/4

Fig. 6.
DRILL FROM POINT BARROW.

Another class of circles, with nuclei, appear to be made with auger bits, the central pin being filed to a sharp point, while the outer vertical cutting edge is also filed so as to cut toward the surface of the ivory, and to remove the texture upon which the auger is impressed. The grooves resulting from such work and with such an instrument are sharply defined, with lateral sides and a nearly level bottom, while the circles are mathematically accurate in form. An illustration of such work is reproduced in plate 19, the specimen being from a locality north of Norton Sound.

The smaller and more delicate circles occur on earrings and other like objects of personal adornment, and upon such articles of frequent need as sewing utensils, examples of which are given in a number of illustrations.

Upon the pipestems also are shown excellent results of such aboriginal work, the ivory stem shown in plate 20, bearing eight sets of circles, that one nearest the brass-bound mouthpiece consisting of but a single circle with its central pit or nucleus one-eighth of an inch deep, while the circle itself is but a mere hair line in comparison; the next two figures consist of two circles each with the central spot, the next four having three circles each beside the central point, while the last, or eighth, has four concentric rings and the central nucleus.

According to measurement, the inner or primary circle, in all, is three-sixteenths of an inch in diameter; the next larger one, beginning with the second ring, is one-fourth of an inch in diameter; the next larger, being the outer circle on the fourth figure, measures three-eighths of an inch, while the outer circle of the last figure, having four rings, measures one-half of an inch in diameter.

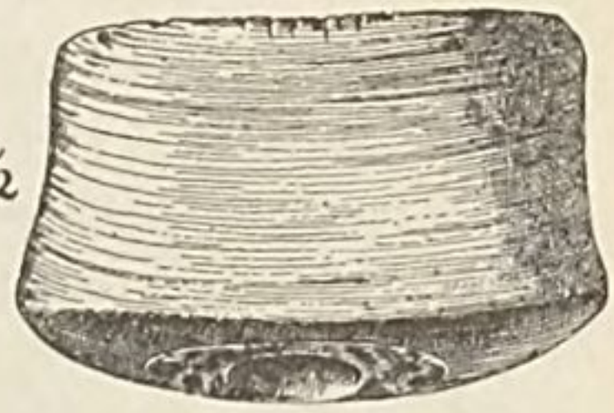


Fig. 7.

DRILL MOUTHPIECE WITHOUT WINGS.

The central pit or nucleus in each of the circles, excepting two, is filled with a tightly fitting wooden peg, smoothed off level with the surrounding surface, and carefully blackened to accord in color with the surrounding blackened circles.

This regularity in diameter of the several sizes of circles indicates the use of a bit, or tool, of foreign manufacture which the natives obtained probably through barter. The sizes increase by one-sixteenth of an inch each time a change is made corresponding exactly to the regulation sizes used by carpenters and other workers in wood.

Drills are used for perforating all kinds of materials, wood, bone, ivory, and even metals, and are much more common than awls among the more northern natives. The handles are of wood and sometimes bone, the point being made of iron or steel, though before the introduction of metals flint and similar siliceous materials were employed in arming the tool.

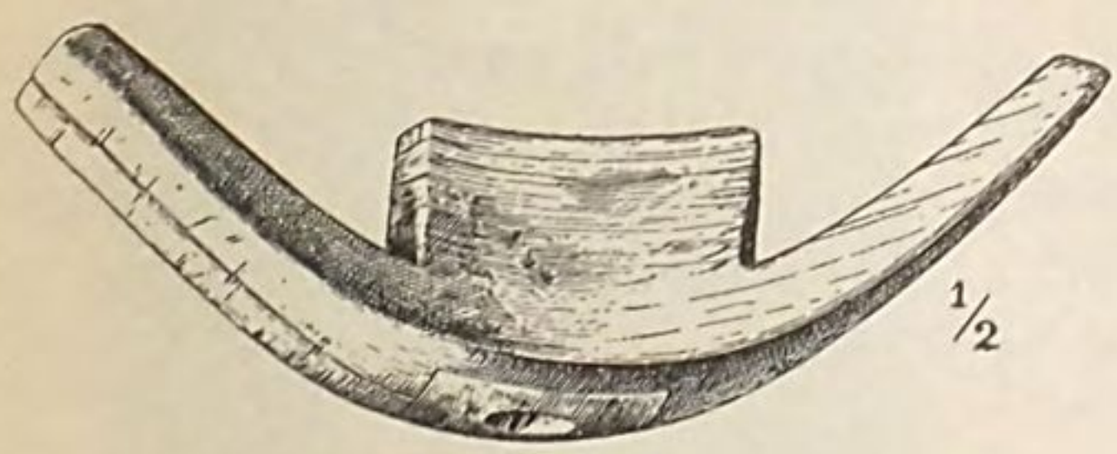


Fig. 8.

DRILL MOUTHPIECE WITH SOCKET OF IRON.

The illustration given in fig. 5 is a bone pointed drill from Point Barrow, while fig. 6 represents one with an iron drill mounted in a handle of spruce wood which was once painted with red ocher. When the natives use the drill and bow, both hands are necessarily occupied, one in steadying the object to be perforated while with the other the bow is held and moved horizontally to rotate the drill.

Therefore, to produce the necessary pressure upon the top of the drill, the native puts into his mouth a drill mouthpiece in which the top of drill rotates. Fig. 7 represents a mouthpiece with an iron

socket, while in fig. 8 is another also of wood, but holding a socket of syenite to withstand the friction of the drill.

Some of the specimens in the collections of the National Museum are decorated with the usual deep incisions found in Point Barrow bag handles and tinted with what appears to be red ocher.

In several instances the wooden pegs inserted in the perforations made to represent eyes, ears, or nostrils, of small animal forms, are colored, and in other specimens, such as earrings, glass or porcelain beads are inserted instead.

After the etchings have been made in the ivory or other material, the creases or incisions are colored so as to bring out the design in sharp contrast to the surrounding surface.

Mr. Turner informs me that "the black substance used to color the etched lines was from the charcoal prepared from burned grass, then powdered, mixed with oil, and rubbed into the etching. Afterwards the begrimed hand of the owner was sufficient to renew the coloring matter. Some of the etchings are colored with a red substance which (an innovation in the art) is procured from the traders' stock."

Mr. W. H. Dall remarks:

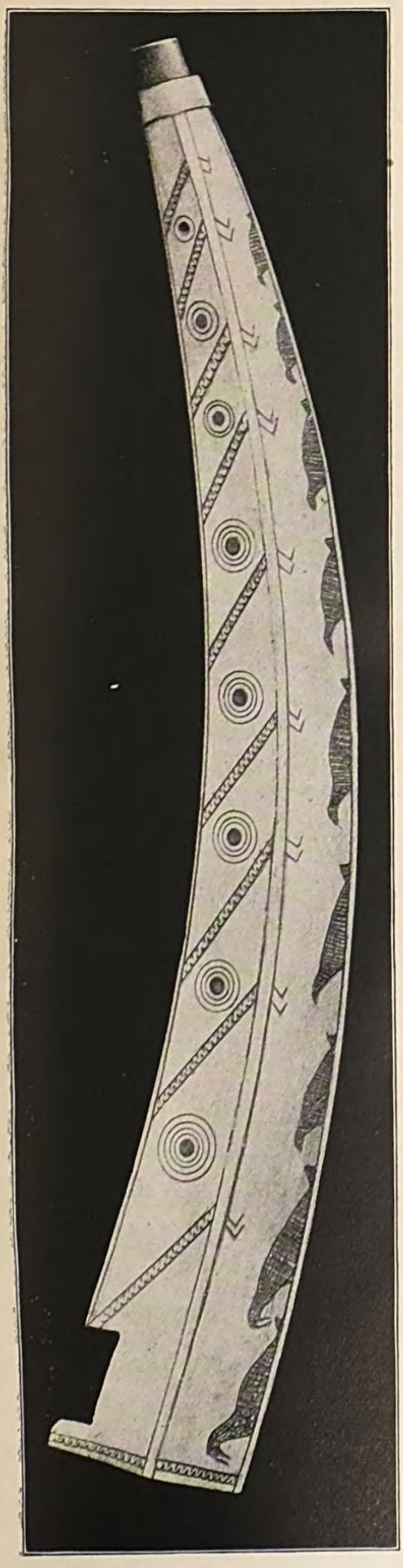
> The coloration of wooden articles with native pigments is of ancient origin, but all the more elaborate instances that have come to my knowledge bore marks of comparatively recent origin. The pigments used were blue carbonates of iron and copper; the green fungus, or peziza, found in decayed birch and alder wood; hæmatite and red chalk; white infusorial or chalky earth; black charcoal, graphite, and micaceous ore of irons.
>
> A species of red was sometimes derived from pine bark or the cambium of ground willow. In later prehistoric burial places, the wooden earrings bear the colors nearly as bright as when first applied.

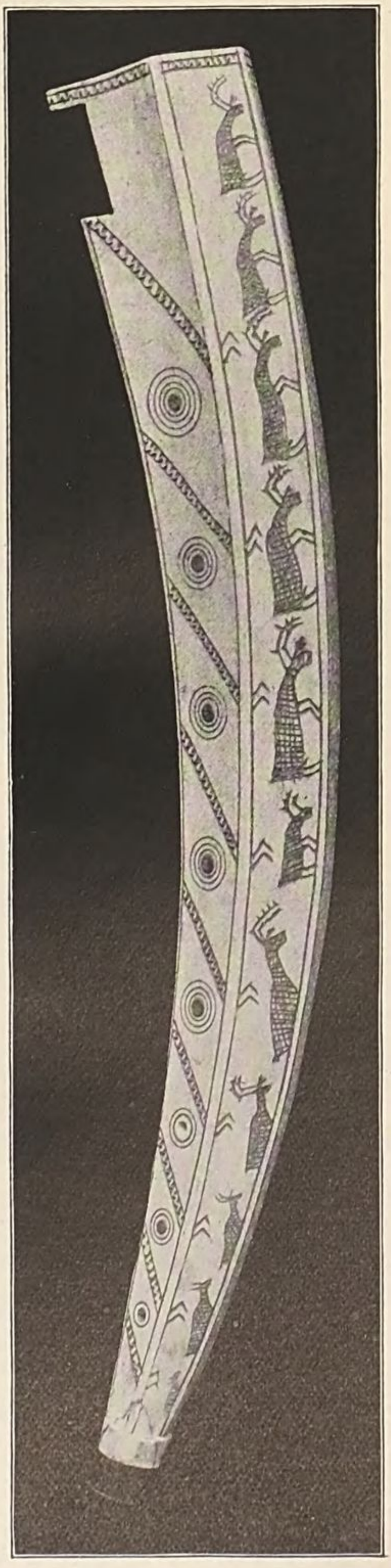
PORTRAYAL OF NATURAL AND OTHER OBJECTS.

In the following illustrations, which represent selected figures from various records, will be noted the several styles of illustrating like species of animals, and the fidelity of expression and outline of some specimens in further illustration of the intimate acquaintance by the aboriginal artist of the subject by which he attempted to portray his skill.

Plate 12 serves to illustrate the form of the Barren-ground caribou or Alaskan reindeer, as well as the horns of the male and female, while in the representation of the form of the walrus similar accuracy is attained, as may be observed by comparing numerous etchings with the illustration on Plate 11, which represents an exceedingly well-formed walrus.

In fig. 9 is presented a herd of reindeer shown in various attitudes, the general execution of the figures being very cleverly done. The heads of some are turned to the front, thus showing decided success in an attempt at foreshortening; some of the animals are lying down, as if resting, while others appear to be browsing.





IVORY PIPE STEM, SHOWING RIGHT AND LEFT SIDES.

The animals composing the herd in fig. 10 are engraved so as to represent them in various attitudes. In No. 1 the animal appears to be coming up, as out of a depression, or water, while in No. 2 the animal is grazing. No. 3 is in the act of lying down, as shown in the bent legs. In No. 4 the animal is lying down, and the head is drawn so as to make it appear as if looking either toward or away from the beholder.

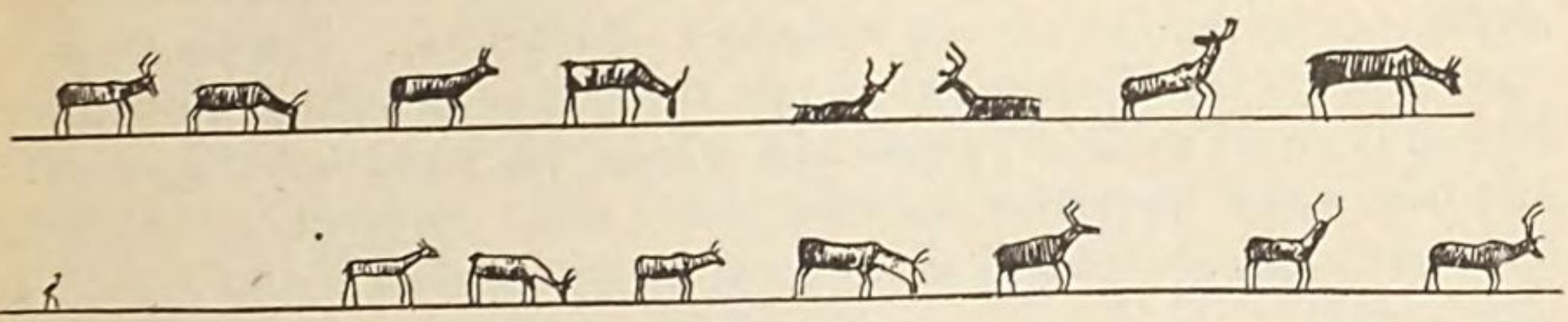
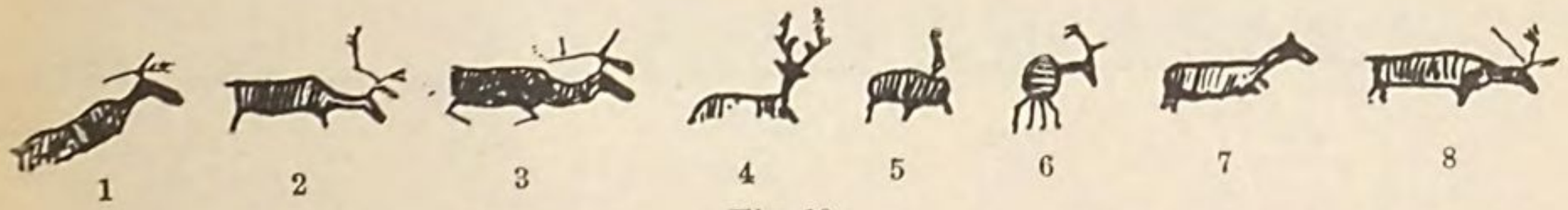


Fig. 9.

HERD OF REINDEER.

Foreshortening is of rare occurrence in primitive art, but besides the preceding instance the animal in No. 6 is also partly portrayed in such an attitude. No. 5 is not definitely depicted, the horns being in such relative position with the body as if the animal's head were turned around as if it were licking its side. No. 7 is a doe, while No. 8 is a male, without any indication of action being shown.



1 2 3 4 5 6 7 8

Fig. 10.

HERD OF REINDEER.

In fig. 11 the native artist has certainly expressed an intimate acquaintance with the habits of deer. The attitude of the animal in No. 1 seems one of careless interest, if it may be so designated, in what the rest of his comrades may show more concern. No. 2 is in the attitude of rising from the ground, while that in No. 3 exhibits a desire to move away as if from an enemy. No. 4 is shown, by the position of the legs,

Fig. 11.

HERD OF STARTLED DEER.

Fig. 12.

HERD OF STARTLED DEER.

to exhibit more activity in hastening away. The foreshortening visible in No. 5 seems to place the leader of the herd in the attitude of a protector, being on the defensive, and showing a disinclination to run away from those over whom he may have exercised the privileges or rights of a leader. In this instance, as in the following illustration, very excellent workmanship and artistic taste are exhibited.

In the illustration shown in fig. 12 the deer have congregated

because of an alarm, their heads being directed forward toward the beholder, the foreshortening being admirably executed. Four animals are indicated, three being so closely placed as to make identification rather difficult.

The various attitudes of reindeer portrayed in fig. 13 are readily discernible, the heads and horns aiding in specifically distinguishing the sexes, as also the various degrees of interest manifested at an alarm, caused by the unseen approach of a hunter. The figure at the right end of the illustration shows the native crawling up behind a hillock covered with tall grass and weeds, his hand holding an arrow and bow which he pushes forward before him. Several of the animals are drawn foreshortened, an attempt in art seldom found among the aborigines.

Plate 21, fig. 3, is a drill bow, and is from Kotzebue Sound. The upper or convex side represents a herd of thirteen reindeer in various attitudes of moving forward and grazing. The fourth animal from the left end is drawn with its head very gracefully elevated and looking backward, a fact very unusual in an aboriginal pictograph. The curves are deep and heavy and quite characteristic of the engravings of natives of the region from which the specimen was obtained.

Fig. 13.

HERD OF REINDEER.

This illustration is from the same bow of which the reverse is shown in plate 22, fig. 2.

Plate 21, fig. 6, is also a drill bow from Kotzebue Sound, and is very yellow with age. The figures portrayed denote reindeer. The peculiarity of this record is the depth of the incisions forming the characters, indicating bold, strong work. The under surface of the bow also bears the outlines of reindeer (somewhat larger than those upon the opposite side), which are drawn with great fidelity to specific features, with the exception of the shape of the body. The peculiarities of the horns are carefully noted by the artist, and the various attitudes are exceedingly natural.

Plate 22, fig. 2, represents a drill bow also from Kotzebue Sound, measuring 14 inches in length along the convex surface. The record portrays thirteen reindeer and three animals which may belong to the same species, although because of their shorter necks and stouter bodies identification is uncertain. The herd seems to be moving forward, some of them engaged in browsing, and some attempt appears to be made at perspective. The three short lines at the upper right-hand side of the bow immediately above and in front of the right-hand figures of the deer are the outlines of three otter. All of these

EXPLANATION OF PLATE 21.

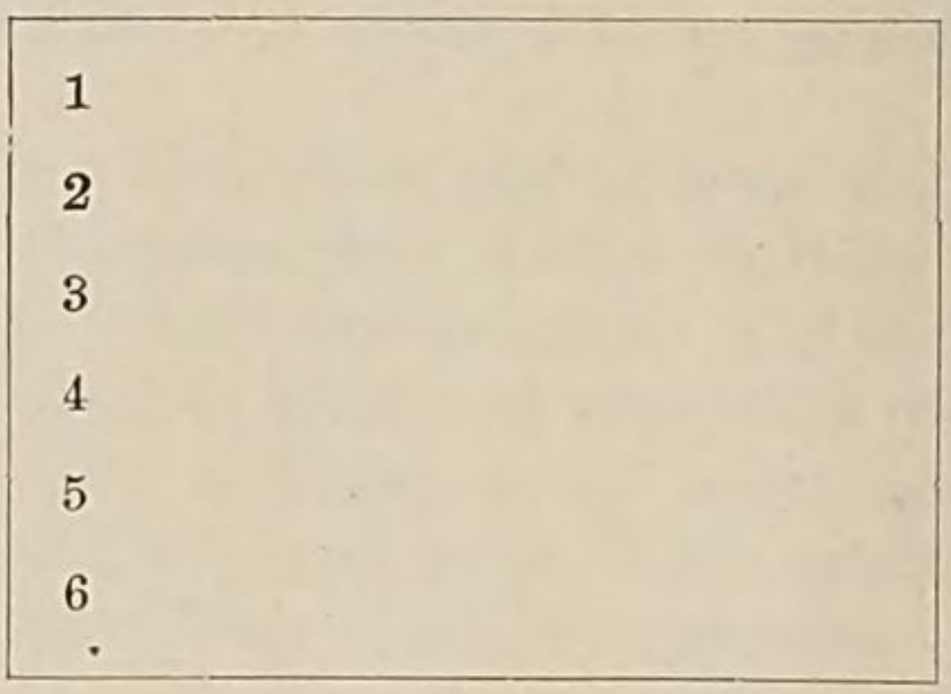


Fig. 1. BAG HANDLE.
(Cat. No. 48531, U. S. N. M.)

Fig. 2. DRILL BOW.
(Cat. No. 48521, U. S. N. M.)

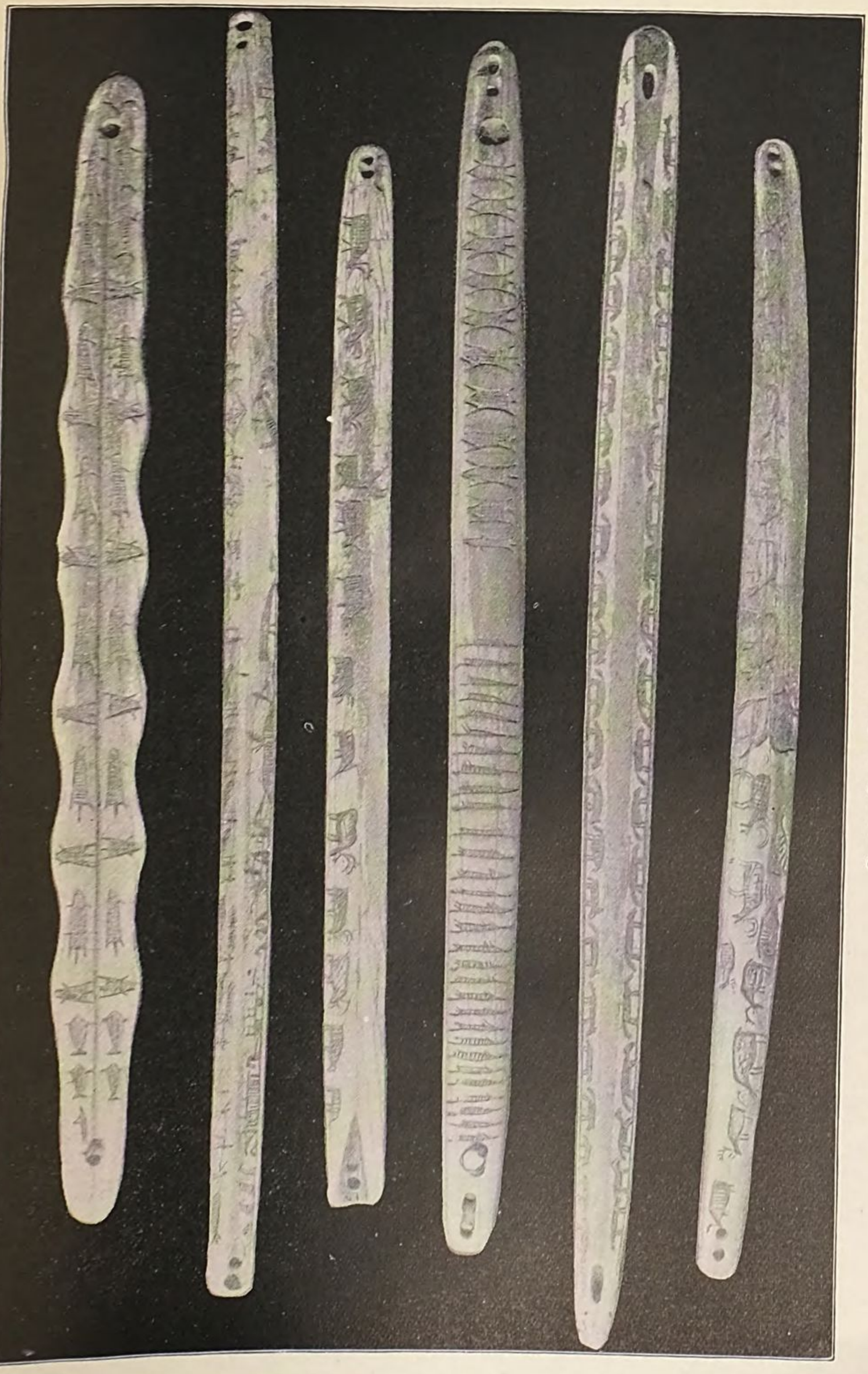
Fig. 3. BAG HANDLE.
(Cat. No. 48528, U. S. N. M.)

Fig. 4. BAG HANDLE.
(Cat. No. 48529, U. S. N. M.)

Fig. 5. DRILL BOW.
(Cat. No. 48520, U. S. N. M.)

Fig. 6. BAG HANDLE.
(Cat. No. 48530, U. S. N. M.)

All from Kotzebue Sound. Collected by E. W. Nelson.



CARVED DRILL BOWS AND BAG HANDLES.

EXPLANATION OF PLATE 22.

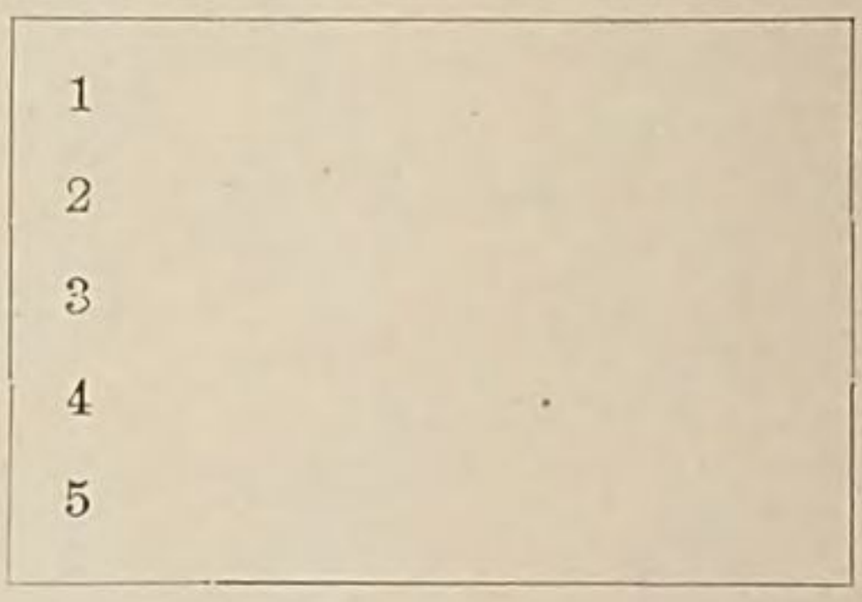


Fig. 1. BAG HANDLE.
(Cat. No. 48531, U. S. N. M.)

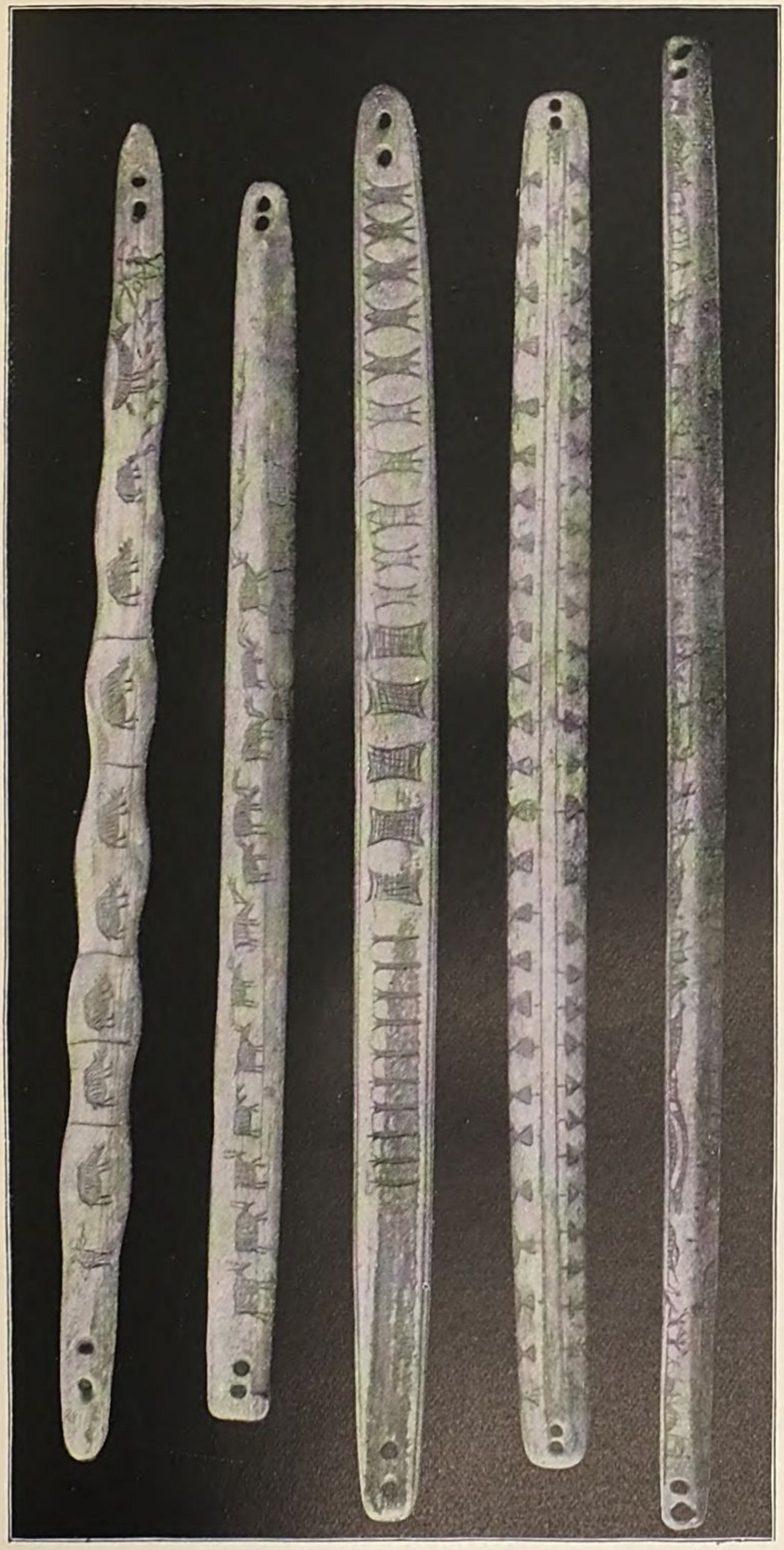
Fig. 2. BAG HANDLE.
(Cat. No. 48528, U. S. N. M.)

Fig. 3. DRILL BOW.
(Cat. No. 48525, U. S. N. M.)

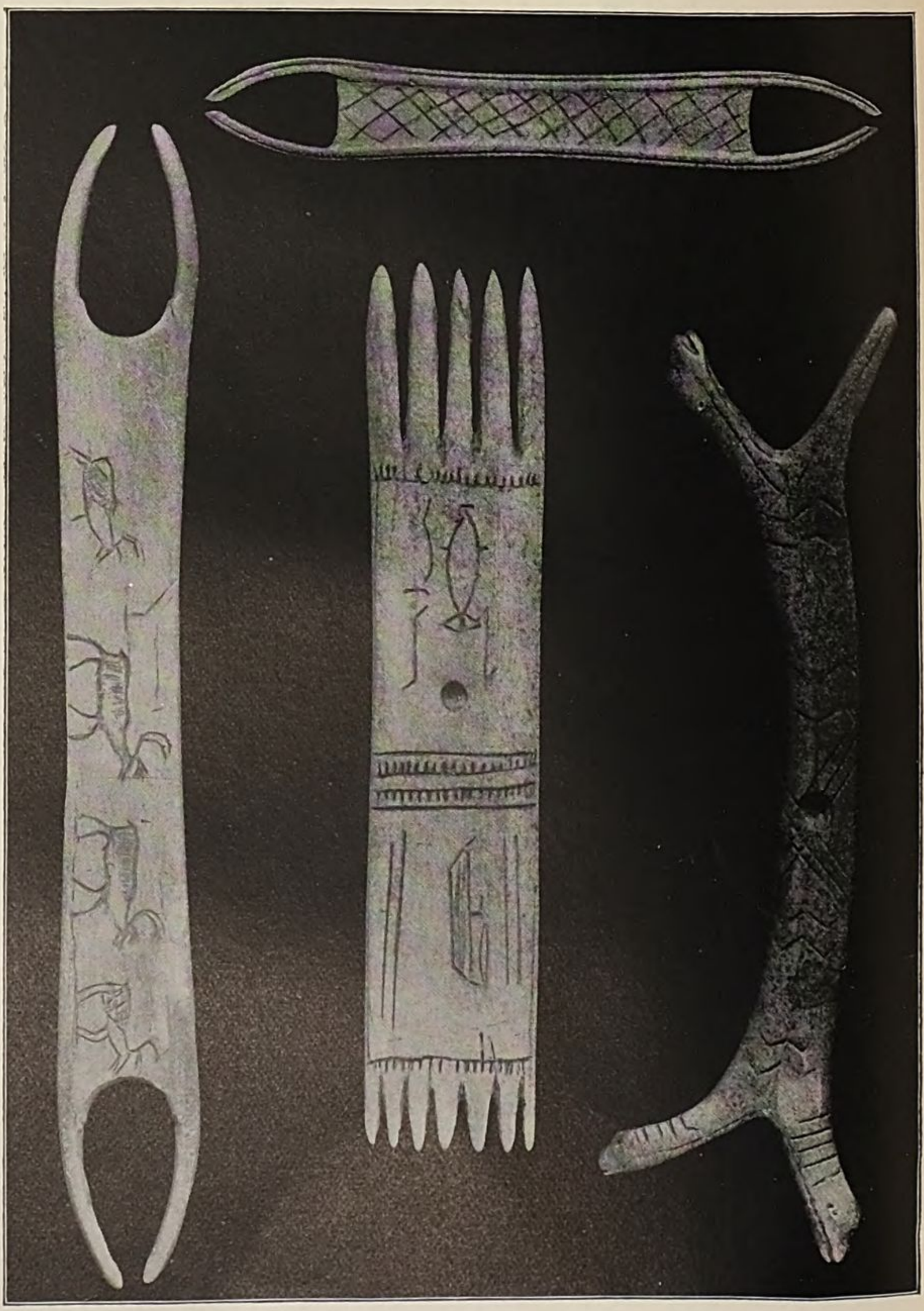
All from Kotzebue Sound. Collected by E. W. Nelson.

Fig. 4. BAG HANDLE.
(Cat. No. 89424, U. S. N. M. Point Barrow. Collected by Lieut. P. H. Ray, U. S. A.)

Fig. 5. DRILL BOW.
(Cat. No. 48521, U. S. N. M. Kotzebue Sound. Collected by E. W. Nelson.)



CARVED DRILL BOWS AND BAG HANDLES.



UTENSILS OF BONE AND HORN.

EXPLANATION OF PLATE 23.

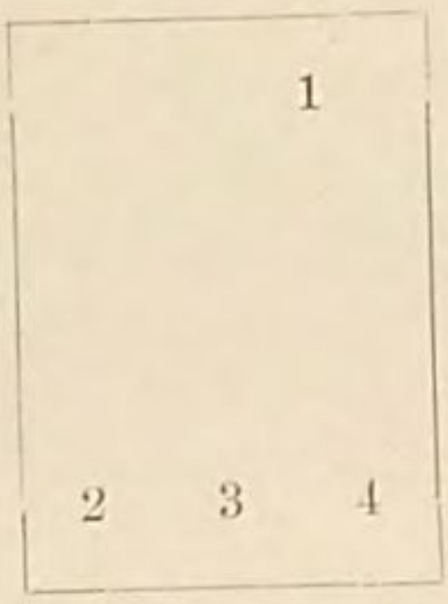
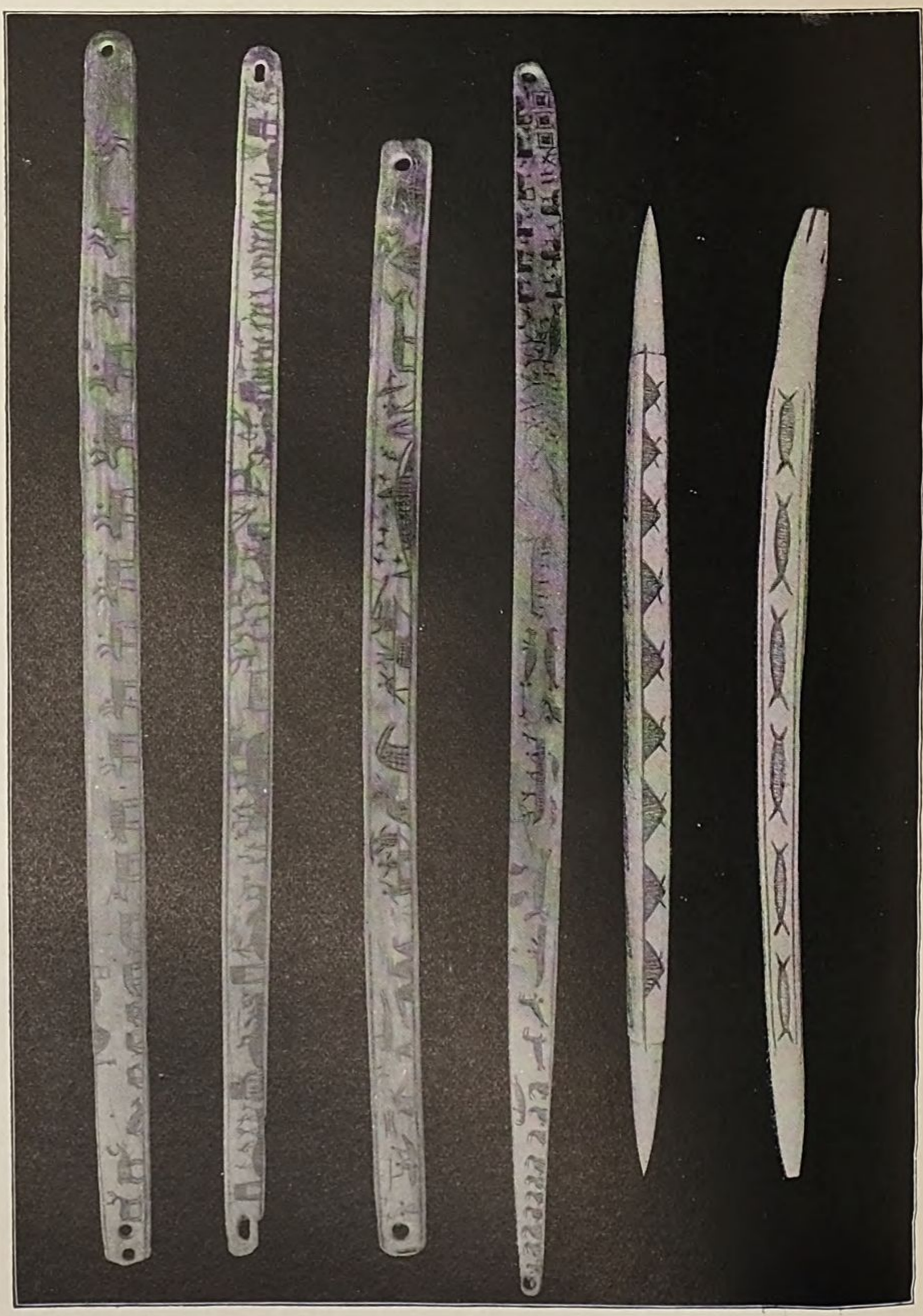


Fig. 1. Reel for Sinew for Small Nets.
(Cat. No. 43523, U. S. N. M. Cape Vancouver. Collected by E. W. Nelson.)

Fig. 2. Bone Seine Shuttle.
(Cat. No. 44448, U. S. N. M. Cape Nome. Collected by E. W. Nelson.)

Fig. 3. Grass Comb of Bone.
(Cat. No. 48541, U. S. N. M. Kotzebue Sound. Collected by E. W. Nelson.)

Fig. 4. Fishing Implement.
(Cat. No. 38276, U. S. N. M. Lower Yukon. Collected by E. W. Nelson.)



CARVED IVORY BOWS AND BODKINS.

EXPLANATION OF PLATE 24.

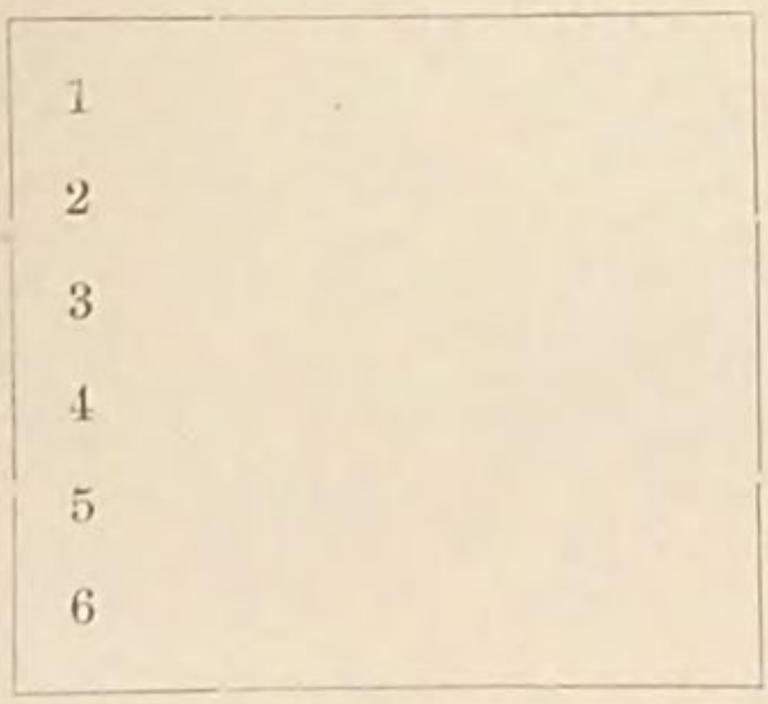


Fig. 1. DRILL BOW.
(Cat. No. 44209, U. S. N. M. Cape Darby. Collected by E. W. Nelson.)

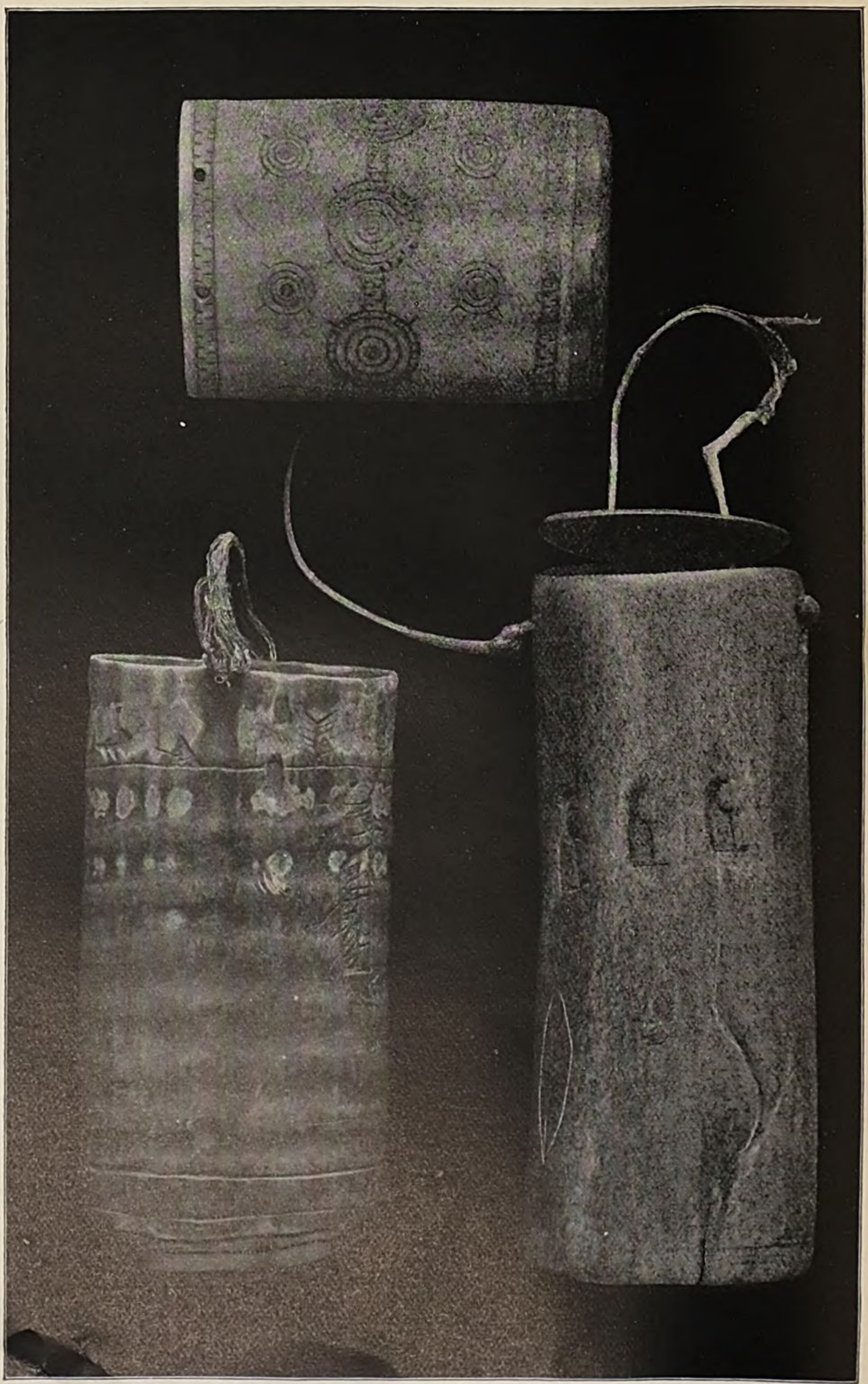
Fig. 2. DRILL BOW.
(Cat. No. 28021, U. S. N. M. Sledge Island.)

Fig. 3. DRILL BOW.
(Cat. No. 43931. U. S. N. M. Nubuiakhchugaluk. Collected by E. W. Nelson.)

Fig. 4. DRILL BOW.
(Cat. No. 44466, U. S. N. M. Cape Nome. Collected by E. W. Nelson.)

Fig. 5. BODKIN.
(Cat. No. 33176, U. S. N. M. Norton Sound. Collected by E. W. Nelson.)

Fig. 6. BODKIN.
(Cat. No. 33177, U. S. N. M. Norton Sound. Collected by E. W. Nelson.)



BOXES OF BONE AND TUSK.

EXPLANATION OF PLATE 25.

Fig. 1. IVORY CASKET.

(Cat. No. 24606. St. Michaels. Collected by L. M. Turner.)

Fig. 2. SNUFF BOX.

(Cat. No. 33197, U. S. N. M. Norton Sound. Collected by E. W. Nelson.)

Fig. 3. BOX FOR FUNGUS ASH.

(Cat. No. 48558, U. S. N. M. Kotzebue Sound. Collected by E. W. Nelson.)

engravings are characteristic of the crude deeply incised lines of the work accomplished by the Indians of Kotzebue Sound and vicinity.

Plate 23, fig. 2, is a bone seine shuttle from Cape Nome. This is ornamented with several almost indefinite lines at the left, probably representing seals, while the four conspicuous characters represent well-engraved outlines of the reindeer. The shading or marking upon the bodies of the animals is indicative of the markings of color upon the animal, and upon the two middle figures this marking is indicated by delicate vertical lines very artistically rendered.

Plate 24, fig. 4, represents a triangular drill bow obtained at Cape Nome. The specimen measures $13\frac{1}{4}$ inches in length. The thirteen figures at the left represent walruses, two of them heading toward a kaiak occupied by a single hunter who appears to be chased by a walrus coming from the opposite direction, as if it had been pursued and probably angered by the five hunters shown in the umiak immediately to the right of it. The native in the stern end of this umiak has successfully harpooned a walrus, as is indicated by the delicate zigzag line connecting his hand with the harpoon which is securely embedded in the breast of the animal. Now, turning the bow upside down, there will be seen two walruses being towed along by an umiak occupied by five hunters. Immediately to the left of this umiak is another boat of similar construction which has just been pulled on shore, as the position of the boat indicates, as well as the attitude of the six natives walking along toward the left, each with something in his hands, which has evidently been taken from the boat, and which has been captured or secured on the hunt. The remaining six figures indicate habitations. Again reversing the bow to the original position, opposite to the beached umiak is a walrus which has been captured by the hunters in the umiak proceeding toward the right and toward another walrus which is there shown. The remaining six figures indicate habitations and storehouses, while between the former are shown human figures in various attitudes as if occupied in different tasks. The under sides of the bow bear hunting records, numbers of which will be shown in other connections.

Fig. 14.
FLYING BIRD.

On plate 25, fig. 3, is shown a box for fungus ash. This appears to be made of a piece of bone, is very crude, and bears about the middle a row of five figures, the larger one representing a whale, the next a reindeer, while the three smaller ones appear to be animals of the same species.

Fig. 14 probably denotes one of the water birds, though why it figures on the ivory drill bow without any other characters, in context, it is impossible to say. The attempt at engraving a record may have been abandoned.

The two characters shown in fig. 15, are without doubt deer, as no other species of the family is found in Alaska in which the tangs of the horns project from the posterior ridge of the main branch. In the

elk, which is not found so far north, the tangs project from the anterior ridge, while in the reindeer the horn is specifically bent forward at the middle, and the anterior prong, or "snow shovel," is also usually indicated.

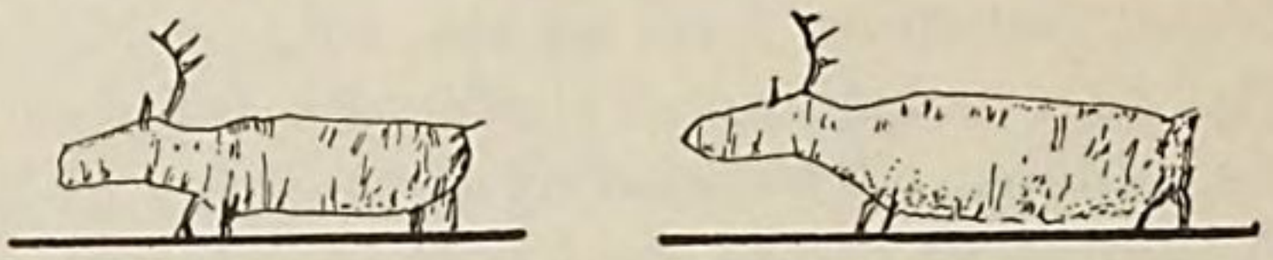


Fig. 15.
REINDEER.

The accompanying illustration of the reindeer, fig. 16, is carefully drawn to indicate the peculiarity of the curved horns. It is rather too short in the limbs in comparison to the size of the body, and although the work is tolerably good, comparison with other illustrations will be found to be of interest.

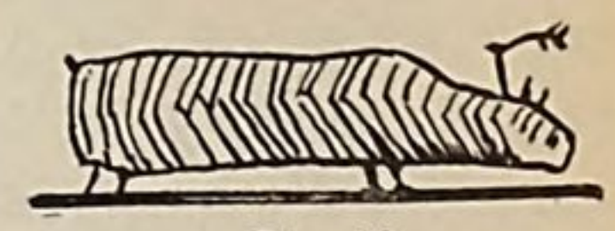


Fig. 16.
REINDEER.

Fig. 17 is a variant of the proceeding, and much better in both resemblance to the animal it is intended to represent as well as in an artistic point of view.

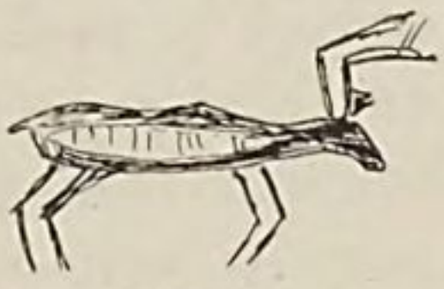


Fig. 17.
REINDEER.

The accompanying figures illustrate the various typical forms of the same animal as drawn by the natives of various parts of the west coast of Alaska. Fig. 18 represents some etchings from a specimen obtained in Point Barrow, though the style of engraving is not very much like that of those people.

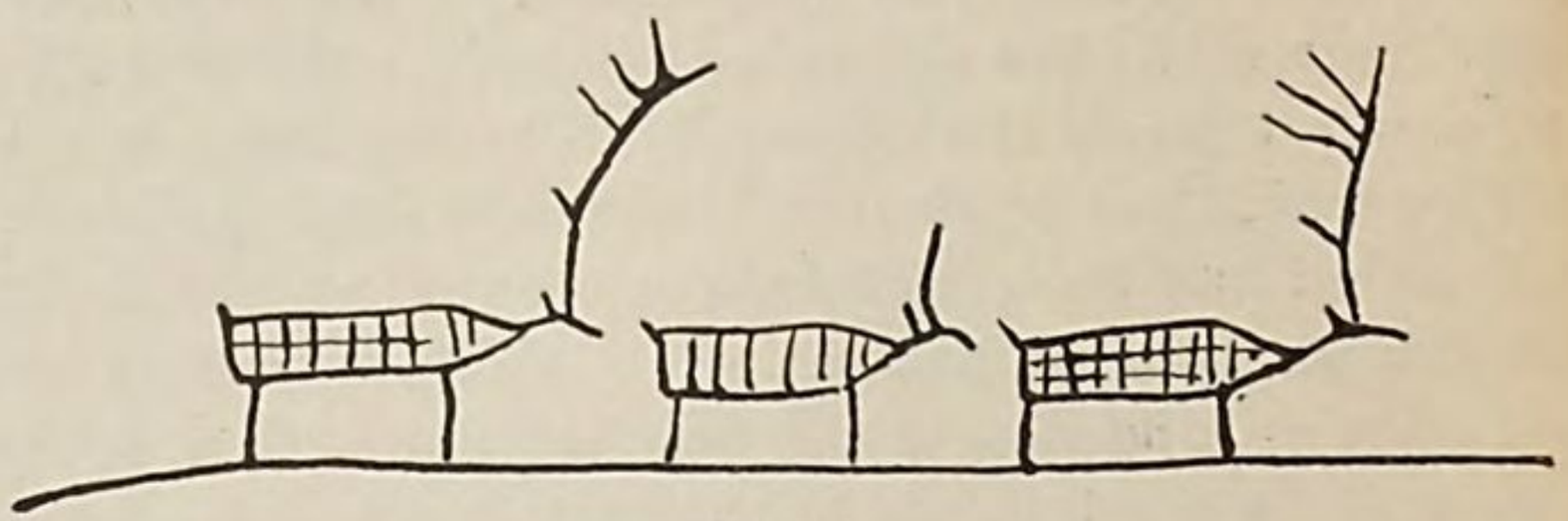


Fig. 18.
REINDEER.

This appears to be one of the few groups in which the horns are so unusually high and in which each animal has but two legs, one at each end of the body.

A specimen of the reindeer shown in fig. 19 is from a fragment of a bone obtained at Norton Sound. Although the interior decoration consists of cross lines, these are diagonal instead of at right angles, as before. A great difference in the art work is visible.

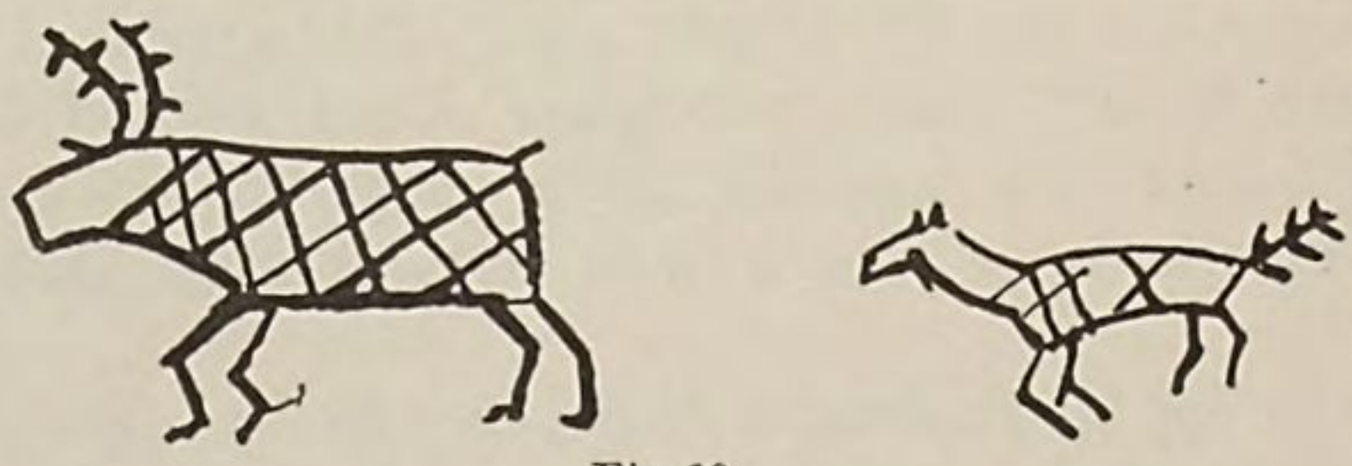


Fig. 19.
REINDEER PURSUED BY WOLF.

The reindeer is followed by a wolf. Two interesting specimens are reproduced from specimen from Kotzebue Sound. The character shown in fig. 20 is heavy in outline, in having a stout body, over which the

EXPLANATION OF PLATE 26.

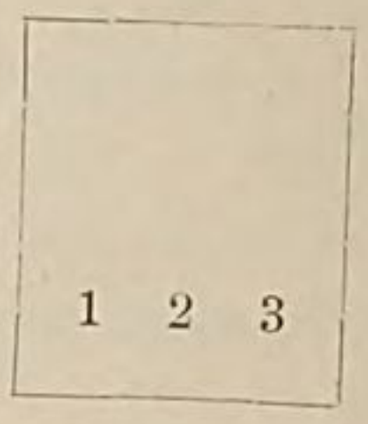


Fig. 1. SEAL DRAG.

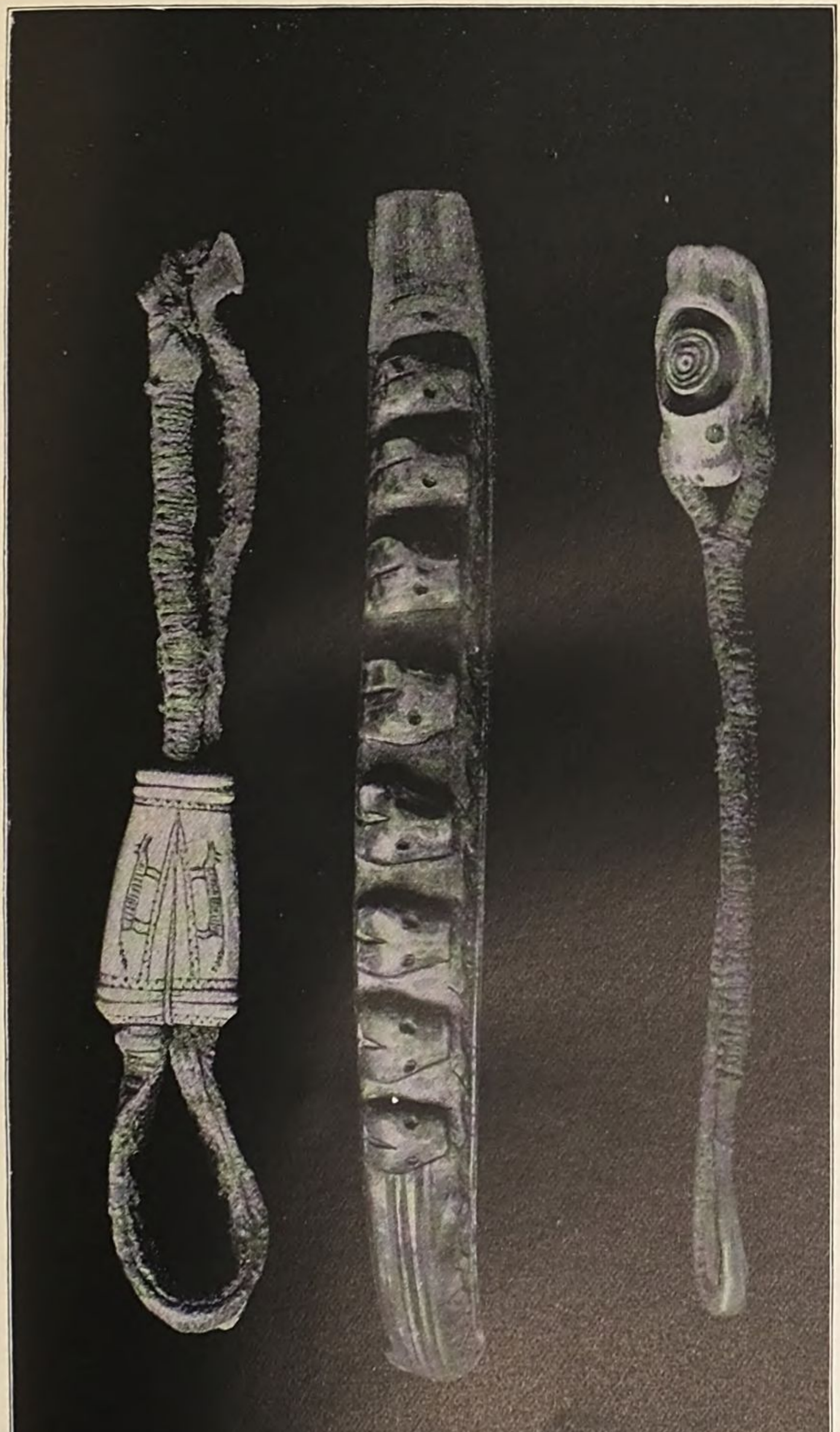
(Cat. No. 129227, U. S. N. M. St. Michaels. Collected by L. M. Turner.)

Fig. 2. HANDLE FOR KANTAG.

(Cat. No. 36375, U. S. N. M. Lower Yukon. Collected by E. W. Nelson.)

Fig. 3. SEAL DRAG. Made to represent two seal heads, upon the throat being effigy of whale, partly detached.

(Cat. No. 33663, U. S. N. M. St. Michaels Island. Collected by E. W. Nelson.)



SEAL DRAGS AND BAG HANDLE.

the etching extends almost entirely, while in fig. 21 the body of a similar animal from the same locality has but a few cross lines. The horns are very well represented within outline and general curvature.

Fig. 20.

REINDEER, KOTZEBUE SOUND.

An interesting pair of animals is shown in fig. 22, the foreshortening being admirably drawn, while at the same time maintaining the typical specific features which are visible in all other native drawings of the reindeer.

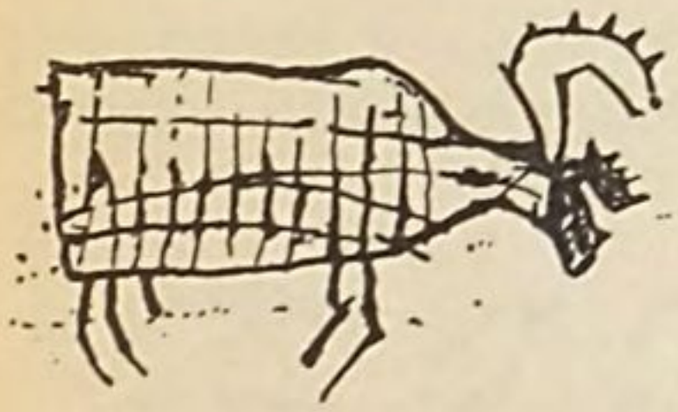


Fig. 21.

REINDEER, KOTZEBUE SOUND.

Plate 26, fig. 1, represents a seal drag from St. Michaels. Upon the upper portion of the ivory utensil are neat outlines of wolves, made with considerable delicacy. The ornamental lines upon which they stand and those encircling the ends of the ornament are a sort of meander or crude zigzag, of which a description is given elsewhere in connection with decoration.

Fig. 22.

REINDEER.

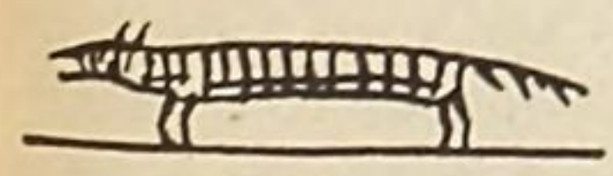


Fig. 23.

WOLF.

Plate 14, fig. 1, represents a fragment of bone from Norton Sound, upon which is a rude etching of a reindeer approaching a wolf, the latter in an inverted position. At the right hand is a perforation, about which is a rude circle ornamented with four radiating lines. Beneath this circle are two parallel curved lines with inner radiating lines, resulting in a very crude meander pattern.

Fig. 24.

PORCUPINE.

Fig. 25.

HUMAN FORM.

The illustration of a wolf (fig. 23) shows the fangs in the partly open mouth, the stiff ears, and long bushy tail. The markings upon the body may be simply in imitation of the etchings found upon most outline or solid figures, though they greatly suggest the brindled fur of the *Canis occidentalis* Dekay.

The porcupine is quite common in some of the southern portions of Alaska, and fig. 24 represents one of these animals, the spines of which are used in decorative work.

Fig. 26.

TWO MEN IN CLOSE EMBRACE.

The engraving seems to have been made with a very sharp tool, as the outlines are groups of thin parallel hair lines.

The selected character reproduced in fig. 25 is so unusual in general form, as found upon ivory or other engravings of the Eskimo, that its presentation here is of interest for purposes of comparison with the pictographs of other peoples, especially the petroglyphs of the western and southwestern, or Pacific Coast States,

embracing the area chiefly occupied by tribes of the Shoshonian linguistic family.

Two figures shown in close embrace, as in fig. 26, may also denote combat, as well as the ceremonial of the shaman, in which the demon causing the illness is shown near the body of the sick person from which it is expelled.

The group of figures of the human form (fig. 27) are selected from a number of engravings on ivory bows, chiefly from southern Alaska.

No. 1 is a form frequently occurring in Kiate'xamut Eskimo pictographs on wood, as when drawn upon slabs of shingle or other smooth

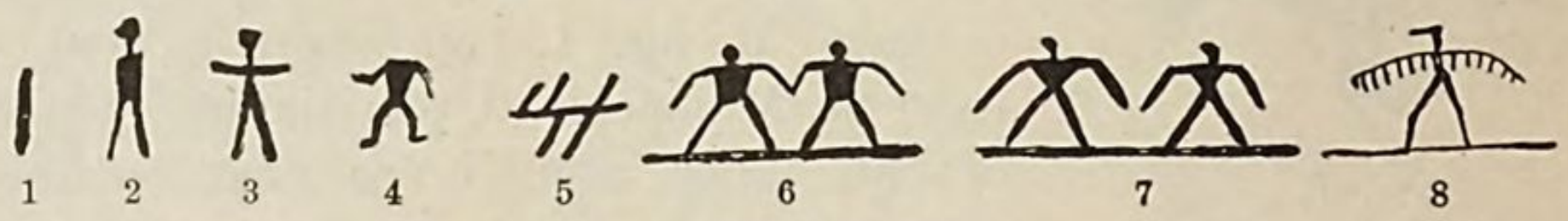


Fig. 27.

VARIENTS OF THE HUMAN FORM.

surface to place over the door of the habitation when the owner leaves for any purpose. It is abbreviated, and the result of carelessness or perhaps incompetency of the recorder. No. 2 is another form of man in which only the lower extremities are indicated, while in No. 3 the arms are thrown out horizontally from the body to denote the gesture for negation, nothing. No. 4 is a headless body and does not always denote death, as is the practice among other pictographers, notably so the Ojibwa. No special information was received respecting the character, and it is probable that the head was obliterated by erosion, having originally been drawn. The specimen was copied from an ivory utensil in the collection of the Alaska Commercial Company in San Francisco, California, and was obtained from the Aiqalu'xamut Eskimo.

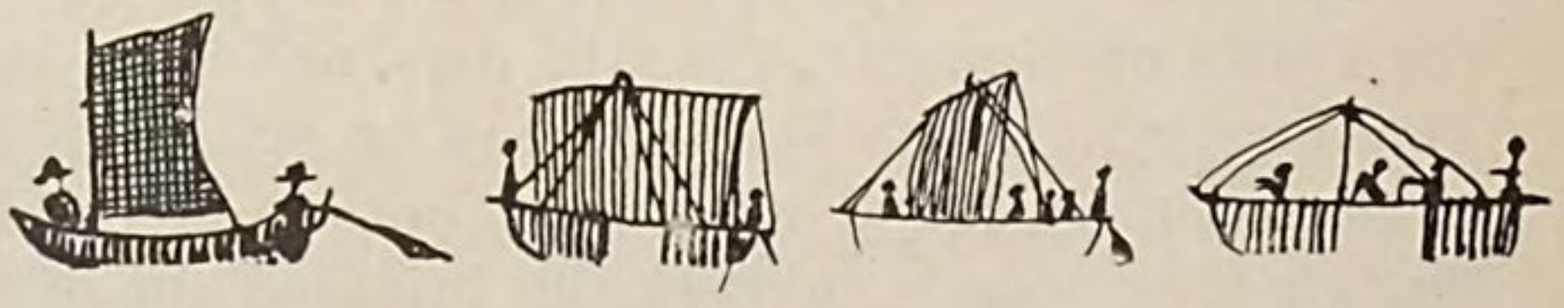
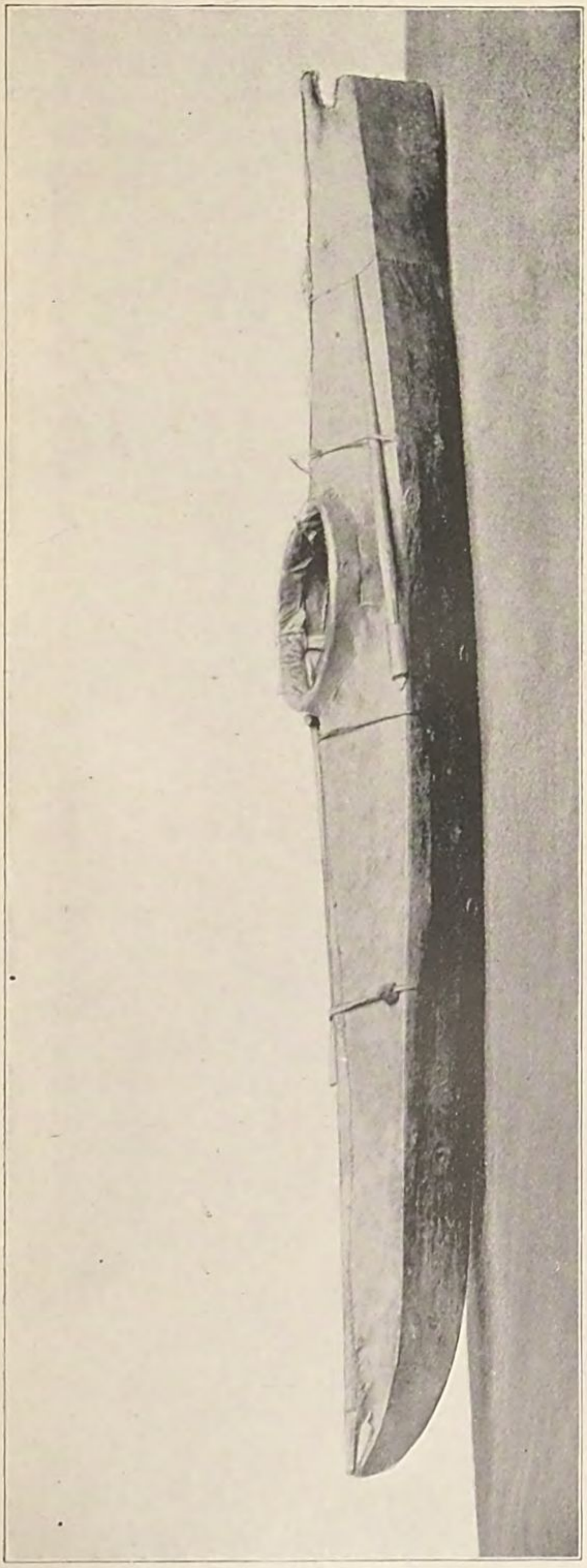


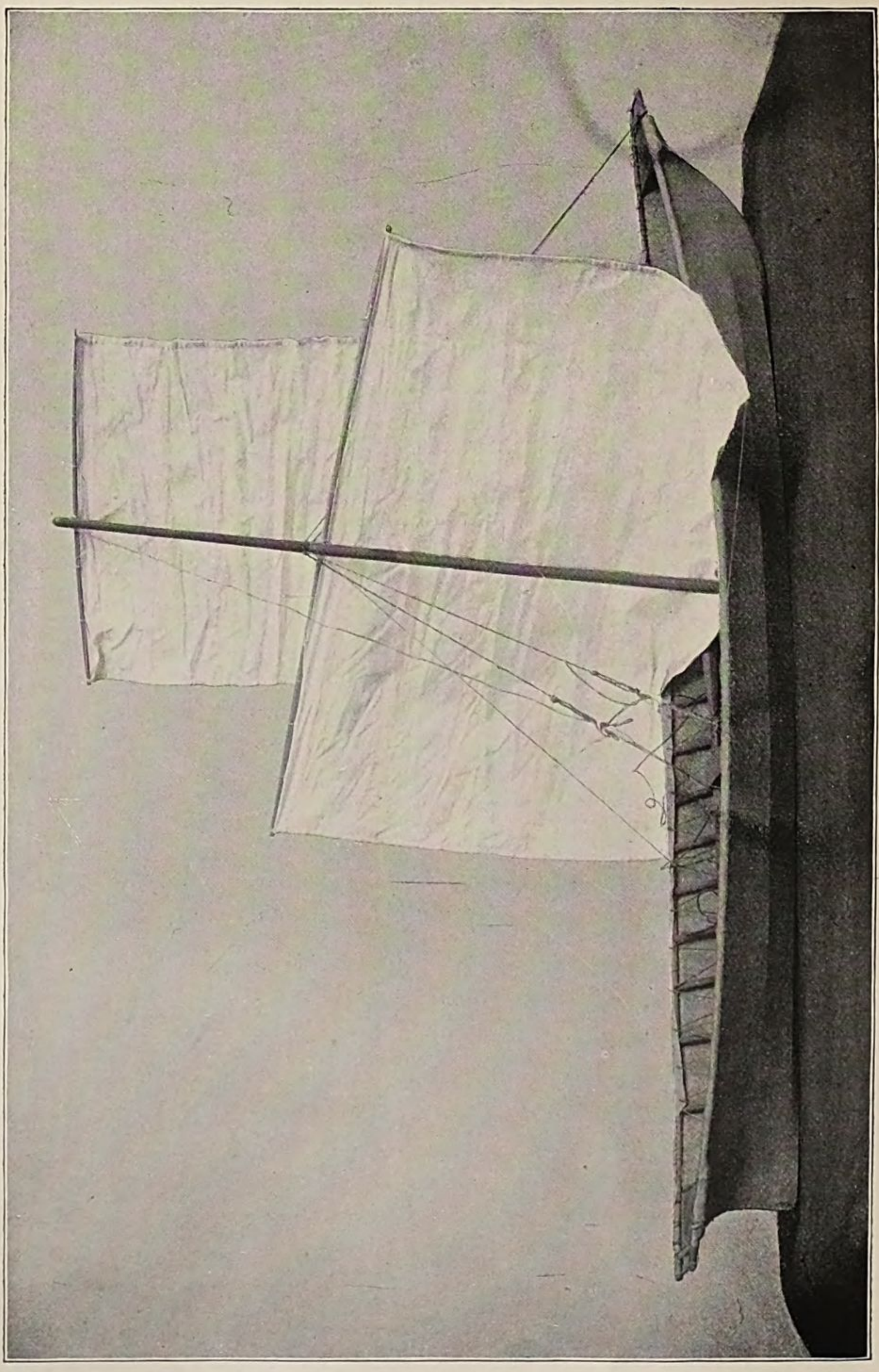
Fig. 28.

VARIOUS FORMS OF VESSELS.

The character in No. 5 denotes a canoe, or kaiak, with two persons within it, while the two paddles project beneath. The right-hand upward stroke of the boat represents the bow of the vessel. Nos. 6 and 7, from Cape Nome, Alaska, are variants of the human form with arms loosely extended, and form in No. 8, having fringe suspended from the sleeves, probably a shaman, and very similar to the Ojibwa designation of the Thunder bird, one of the divinities of the western Algonkian tribes. The figure (No. 8) was copied from an ivory drill bow obtained at Port Clarence, Alaska, by Doctor T. H. Bean, formerly of the United States National Museum.



NATIVE MODEL OF KAIAK. ALASKA.



NATIVE MODEL OF UMIAK. ALASKA.

The portrayal by the native artist of boats, both the kaiak and the umiak, is of such frequent occurrence in the Alaskan etchings and toy carvings that the photographic reproduction of native-made models may be deemed of special interest. Plate 27 represents a kaiak, while the illustration shown in plate 28 represents an umiak with raised sail.

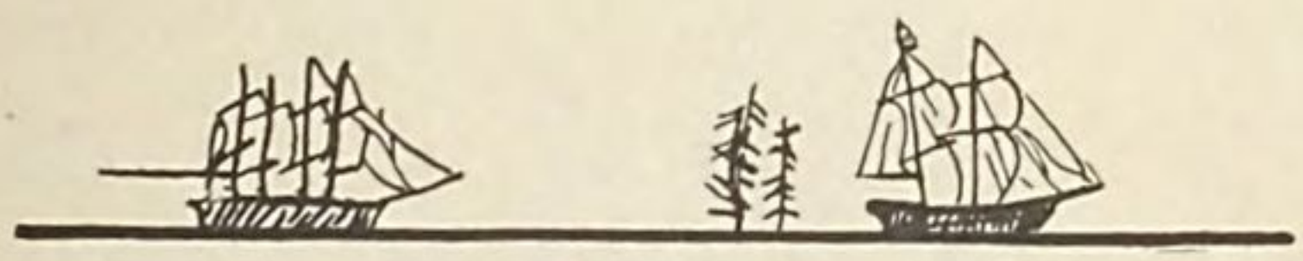


Fig. 29.

WHALING SHIPS NEAR A PINE-COVERED SHORE.

Comparisons with etchings are suggested, as numerous examples of the former occur in abundance, and will be referred to elsewhere and in another connection.

Fig. 28 represents four vessels rigged up with sails, the one at the extreme left being manned by Americans or mixed bloods, distinguished by the presence of hats upon their heads. The hulls of the second, third, and right-hand figures are in imitation of the native made vessel of that size, which is adapted to the erection of masts and small sails.

Fig. 30.

SCHOONER.

The artist has evidently intended to represent the different varieties used by him or his family.

In fig. 29 are represented two vessels, under full sail, within reasonable distance from shore, as is indicated by the presence of two pines which loom up in the middle distance. No special motive appears to have prompted the delineation of the ships, excepting perhaps the record of an unusual event in the history of the locality where it is supposed to have occurred.

The portrayal of a schooner (fig. 30) is perhaps only the result of "having nothing better to do," as loungers often whittle or engrave figures or outlines of such things that create passing interest. It is probable too that something of greater interest may have been connected with the arrival of a vessel from civilization. This, however, could only be cleared up by the artist himself or the person for whom it may have been drawn.

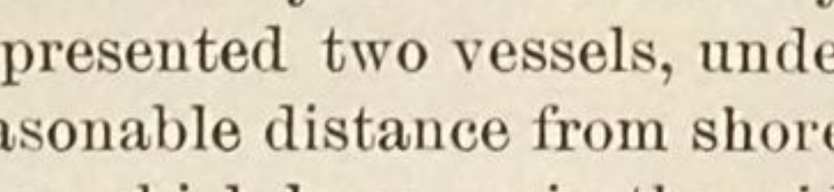


Fig. 31.

STERN-WHEEL STEAMBOAT.

In like manner, the illustration shown in fig. 31 may have been engraved because of some event of consequence connected therewith, or perhaps because of the peculiar appearance in the Alaska waters of a vessel with but one wheel, and that at the stern. Such vessels are common on inland waters of the United States, but their seldom occurrence so far north may have been deemed of sufficient importance of which to make a permanent record.

Fig. 32.

UMIAK.

A crude or unfinished umiak with four occupants is shown in fig. 32. The bodies are not indicated; the heads, arms, and oars being incised. The umiak itself is well drawn, but with mast or rigging erected.

Further reference to vessels, both as to pictographic variants and in relation to conveyance by this means, will be made farther on in connection with conveyance and domestic avocations.

REPRESENTATION BY SYNECDOCHE.

The representation of part of an object to represent the whole, or vice versa, is not so common in the etchings of the Eskimo as in the pictographs of the Indians.

In many instances in the ornamented ivory records, parts of animal or other forms are portrayed in this manner, and such abbreviated characters are subsequently utilized and arranged in such order so as to serve the purpose of simple ornamentation, the primary object or concept having but little if any further connection in its new position.

Mr. L. M. Turner[1] informs me that "the marginal engravures, resembling the tail of a whale, are intended to represent the number of white whales [*Delphinapterus catodon* (Linnæus) Gill.] the owner (or maker) of the ivory article has personally killed or taken in a net.

Fig. 33.

ESKIMO HUNTER AND HERD OF REINDEER.

There are, sometimes, partnership pursuits of these whales (as well as other creatures), and by mutual agreement the quarry falls to him who first struck, killed, or otherwise would have secured the whales."

The spears which are portrayed upon some of the engravings of natives in kaiaks are placed so as to be upon a rest, similar to that shown in plate 29, in order that they may be quickly grasped for use. These rests are made of ivory, and in many instances are decorated. The specimen herewith reproduced is from Point Barrow, where it was obtained by Lieutenant P. H. Ray, U. S. A., and by him sent to the National Museum.

The entire length of the specimen is $8\frac{1}{4}$ inches, the distance across the horns being $4\frac{1}{4}$ inches, and across the base, just beneath the figures of the whales' tails, $2\frac{1}{8}$ inches.

The tails denote the owner to have been a whale hunter. The top of the horns is fashioned in imitation of a whale's head, the long-curved mouth being carefully indicated, while blue beads are inserted to indicate the eyes. Upon the outer edge of each horn, corresponding to the back of the whale, is a cross, in the middle of which is a blue bead. The four loops of thong are for attachment to the boat.

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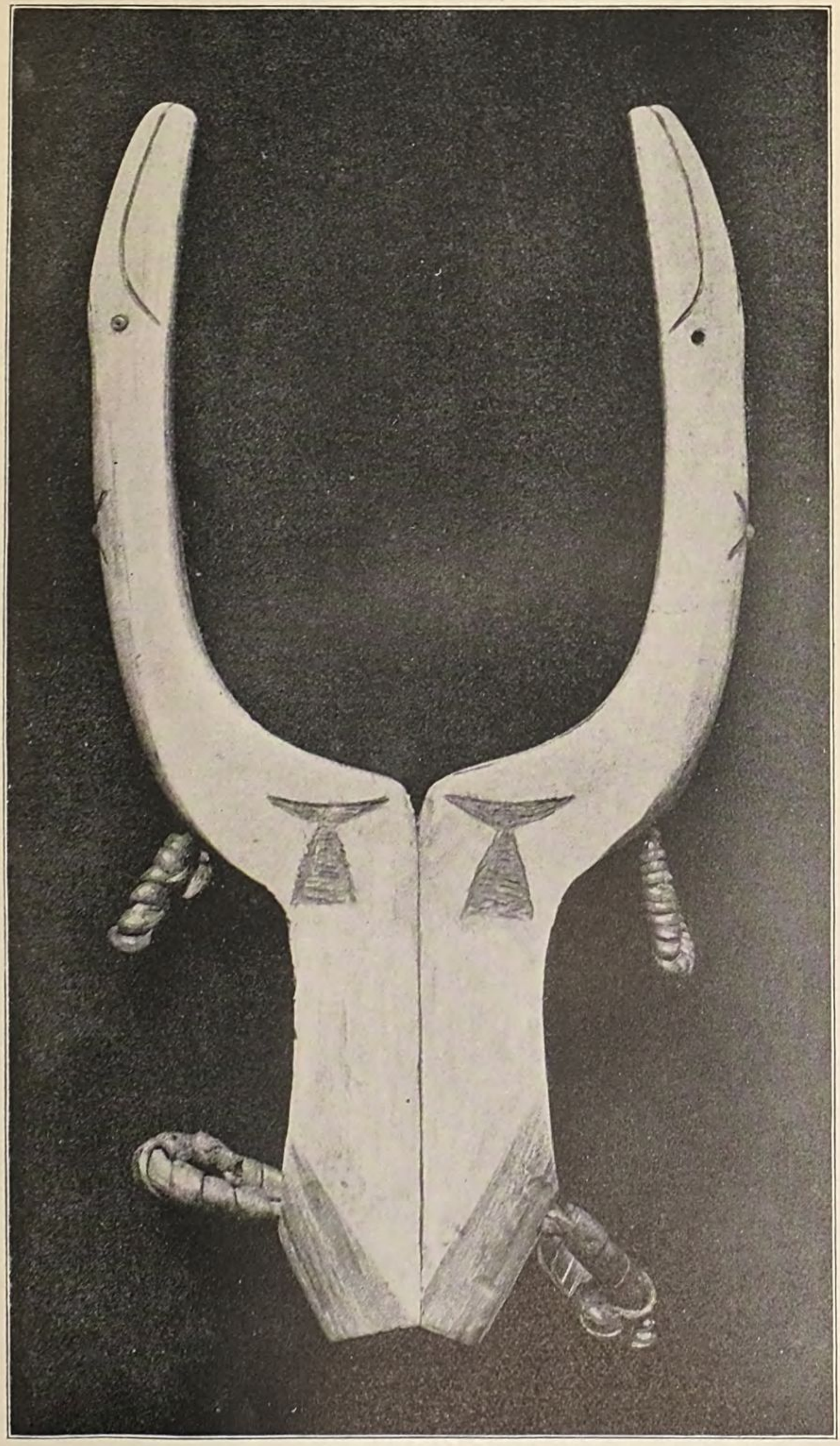
[1] Letter dated February 25, 1895.



SPEAR REST. POINT BARROW.

Reproduced U. S. National Archives

In the illustration shown in figure 33, the idea of many and much is expressed in the same line of thought or conception as in gesture language. The herd of animals, instead of being indicated by drawing the bodies of those in the foreground singly and complete, and only parts of those beyond being perceivable to the beholder, is represented, with one individual exception, by a single figure of a long body, the thirteen heads being subsequently placed at proper intervals above it, while a certain, though deficient, number of legs and feet are drawn beneath and extending to the ground. These are all drawn as if escaping from the hunter.

At the extreme end of the engraving is the representation of a hunter, armed with bow, and indications of arrows. Parts of the figure have become obliterated by frequent use of the ivory drill bow. The deer next to the hunter does not face in an opposite direction, as if escaping, but is drawn with the head lowered and directed toward him. The attitude has perhaps no special signification, further than that this deer was secured by being shot with an arrow, whereas the remainder of the herd which the hunter saw escaped. Compare also figure of herds in plate 65, fig. 4.

Plate 21, fig. 3, represents the convex side of a drill bow, on the right half of which are thirty transverse figures representing that number of wolf pelts. To the right is one otter skin and the outlines of ten bearskins. As will be observed, these figures are deeply cut and rather conventionalized. The great amount of coloring matter and deep incisions represent the bold, strong work, characteristic of the natives of Kotzebue Sound. The lateral edges are ornamented with parallel longitudinal lines.

The regular order of the outline of pelts and hides is perhaps not only illustrative of the great number of animals killed, but the regularity and repetition of specific parts of the animal's body, and the concavity of the sides of the bears' skins, is a tendency toward conventionalizing. On the whole, the record is a good illustration of synecdoche.

As there will be occasion to refer to another curious subject in pictography—the transmission of special characters, or the utilization of native symbolic characters to serve as substitutes to replace imported or intrusive forms—it may not be amiss to refer in this connection to the interesting result noted in British coins, in which the native Britons copied the obverse and reverse engravings which they found upon the gold stater of Philip of Macedon. The coins were introduced into the country of the littoral tribes through traffic with the Gauls, while the latter obtained possession of them after Greece was plundered by Brennus, B. C. 279.

The reverse of the typical stater bears a charioteer in a biga, the two horses in the attitude of running, while behind is the outline of a wheel, usually elliptical, as the space was not sufficiently large to permit a circle as large as the extreme length of the ellipse to be recorded.

The Britons in adopting the design for their native coins, and being perhaps—I may suggest the word certainly—unacquainted with the form, or use, of the chariot, and the signification of other characters and figures found upon the Greek prototype, reproduced in their successive issues and recoinings variations in these foreign characters, or replaced them by symbols with which they were acquainted and of which they comprehended the signification.

In many of the British coins the horses are reduced to a single animal, though with legs sufficient for two, clearly representing the pair by synecdoche, exactly as our North American Indian does in his records of personal or tribal engagements with the enemy.

Illustrations relating to this peculiarity on the coins named, together with the substitution of native and familiar characters and symbols for those of foreign and unknown types, will be presented farther on.[1]

DECORATION AND ORNAMENTATION.

The importation into Alaska and the adoption by the natives of art designs which are foreign to their own does not appear at all impossible, and the subject is one which would seem to offer an interesting field for investigation with a reasonable hope of interesting developments.

With respect to the probability of the transmission of such art work, Mr. Hadden,[2] whom I have before quoted, remarks:

> As decorated objects must be conveyed by man, the means for their dispersal and the barriers which militate against it are the same as those which operate on human migrations; but there is one difference. Where men go we may assume that they carry their artistic efforts and proclivities with them, but decorated objects may be carried farther than the actual distance covered by the manufacturer, or even than the recognized middleman or trader.
>
> This brings us to a very important subject, and that is the question of trade routes. Trade routes are culture routes; and in order to appreciate the history of culture, it is necessary to know the directions in which it flowed. Until we have a more complete knowledge of the ancient trade routes of Europe, we can not recover the history of the prehistoric Europe.

This subject is now beginning to receive great attention in the Old World, and some highly interesting and valuable facts have been brought to light.

In North America the study of prehistoric trade routes, or culture routes, has thus far received but a limited amount of careful attention; but some instances of curious results of intertribal traffic have been observed. Frequently designs of a specific character, such as may be termed peculiar to a special tribe, are carried to remote localities and there adopted by other tribes of an entirely different linguistic family, whereas the same design or pattern of the former may not produce the slightest apparent effect upon the recognized art designs or ornamenta-

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[1] Special attention is called to the work of Doctor John Evans, D. C. L. The Coins of the Ancient Britons, London: 1864–1890. Plates A–N., and I–XXIII, together with figures in text. Map.

[2] Evolution in Art, p. 328.

tion of an adjoining body of people of a like linguistic family and with whom there may be frequent social intercourse. This is accounted for in the instances in mind because of the absence of like materials and resources quite necessary for a faithful imitation of the imported pattern, the original being fully recognized as a cult symbol, and any alteration however slight would immediately provoke the anger of the gods. Therefore, a remote body of people whose cult beliefs are different, and who would perhaps not recognize the sacred or mystic import of a symbol, might readily and without any hesitation adopt such pattern as might suit one's fancy and subsequently alter it to conform to the shape of the material upon which it would be imposed by incision, impressed in color, or otherwise.

The northwest coast of America, between Puget Sound and Kadiak, is an excellent illustration of a culture route, and the arts of the various Selish tribes are traceable over a wide area. The peculiar designs of the Haida, both in sculpture and in tattooing, have been gradually carried northward into the territory of the Thlinkits, the Kadiak, and have been even recently adopted, to a limited extent, by the Aigalu′χamut and Kiate′xamut Eskimo of southern Alaska.

The original patterns of the Eskimo, such as the lines, dots, and herring-bone patterns, do not seem to prevail against the rounded and curved figures and designs of the Haida art. The origin of the latter is peculiar, and the alleged development, if not the introduction and adoption, of the elaborate system of tattooing since about the year 1833, certainly offers an interesting field for critical research.[1]

The Haida patterns, as has been intimated, are very different in both design and concept as compared with the artistic work of the Eskimo. Both are peculiar to the regions in which they flourish, and no resemblance whatever is apparent. The Haida designs originate chiefly in totemic, mythologic, and cult forms, which have, in many instances, become so highly conventionalized as to become difficult of identification. The Eskimo art embraces chiefly an attempt at personal and family records of hunting exploits, with occasional ceremonials portrayed in little more than simple pictorial form, but there is present an exhibition of the progress of recording both gestures and signals, to aid in the explanation of the record, as well as frequent attempts at the record of subjective ideas, a system of pictography foreign to that of the Haida, and more nearly approaching the petroglyphs of various tribes belonging to the Shoshonian linguistic family, conspicuous among which are some of the pueblos of New Mexico and Arizona; and the sculpturings found in Owens Valley, California, the authors of which are unknown but are believed to have been members of the same family, both because of the typical resemblance of many of the patterns and the geographic location of the sculptured bowlders.

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[1] See remarks on "Aboriginal Art in California and Queen Charlotte's Island," W. J. Hoffman, in Proceedings Davenport Academy of Sciences, IV, 1885.

Another trade route of importance in this connection is that afforded by the waters of the Yukon River. Eskimo patterns have been carried up into the country of the Kenai Indians, a tribe usually designated in the northwest as the Tenanah, and of the same linguistic relationship as the Apache, the Navajo, and among many others the Hupa Indians of California. These designs are made up of straight lines, dots, and nucleated circles, and occur upon strips of bone with perforations at one end, and used, it is presumed, as necklace ornaments. Similar ornaments are found also among the Thlinkit, of which illustrations are given on plate 9.

In the National Museum is an interesting relic made of horn, used as a cylindrical box for dentalium shell money, upon which are incised and blackened lines so arranged between two parallel longitudinal lines that the original white surface of the specimen is a serrated figure and not the ordinary zigzag, plate 30. Although the resemblance of this to some of the zigzag and meander patterns of the Eskimo is very striking, no connection can be apparently traced between the two peoples, even along the supposed course of migration of the Hupa toward the coast at the time of the separations of the Apache or Athabascan tribes, vivid traditions of which still obtain among the Apaches, and linguistic evidence of which is complete.

A well-known trade or culture route—in fact, one of the earliest to influence the crude arts of the Eskimo—was by way of the Diomede Islands, when the natives came in contact with the Cossack outposts in eastern Siberia.[1]

The traffic which naturally resulted brought among the American natives various articles of Russian manufacture, among which, no doubt, were ikons and other Christian and ecclesiastical objects and prints, articles which are usually found to be highly decorated in both design and color. Such objects would most naturally tend to influence the simple art of a people who were naturally given to the ornamentation of various utensils and weapons, as also of articles of clothing.

Through this channel were obtained, so Mr. Murdoch informs me, the Siberian pipes and seal nets, which, together with the native labret, have extended eastward of Point Barrow to Cape Bathurst, beyond which locality, it is believed, neither are found. This blank area between Cape Bathurst and the delta of the Mackenzie forms a barrier, or line of demarcation, beyond which the several bodies of Eskimo are artistically distinct from one another. In other words, the three objects named as common to the Alaskan Eskimo are totally absent east of the locality indicated, as found by Mr. Murdoch during his residence at the Point.

Mr. Haddon[2] remarks that although decorated objects pass along

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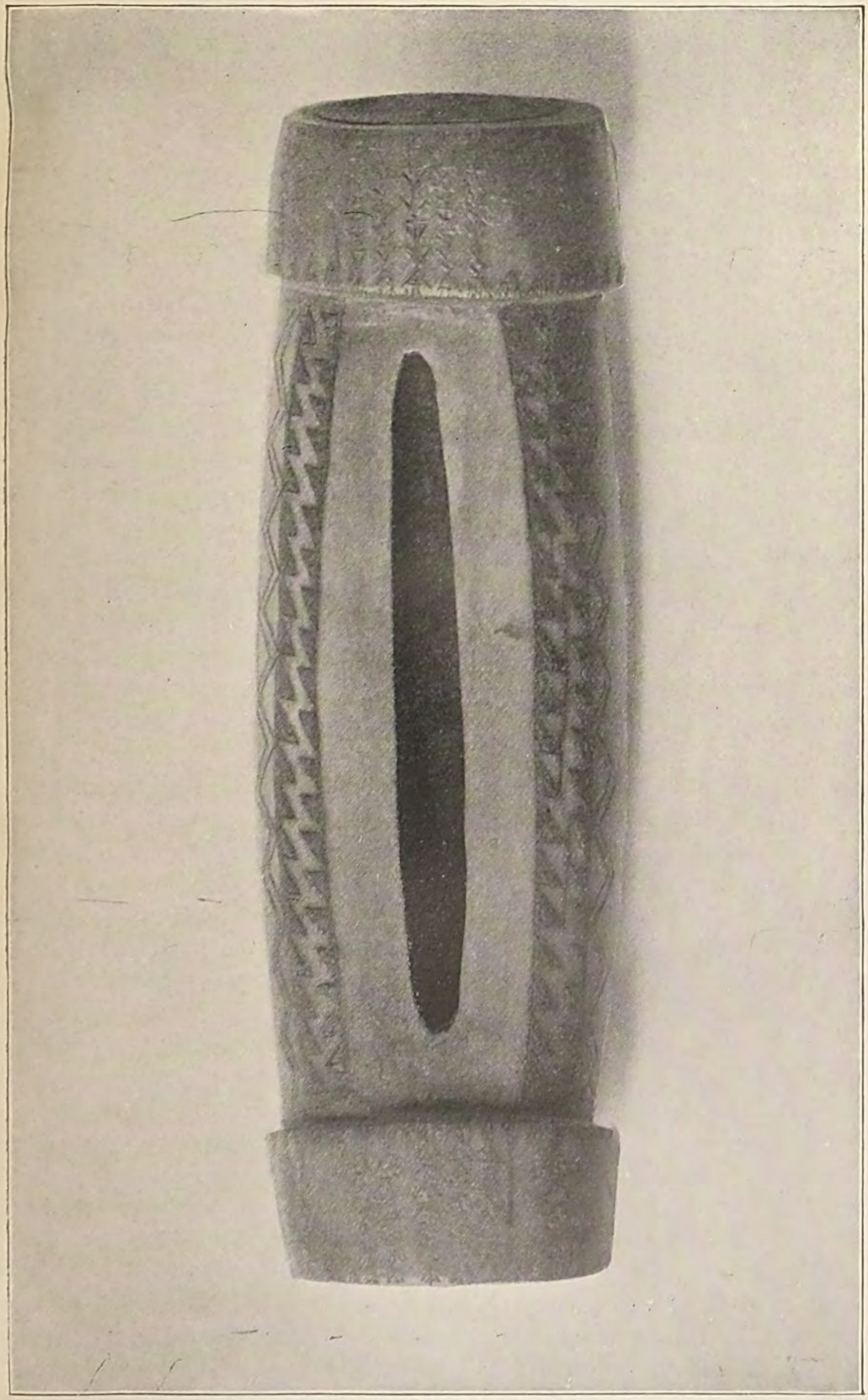
[1] "There is good reason to believe that the Malayans, the Dutch of Asia, crossed the Pacific Ocean in the pursuit of commerce." Dwight. Travels in New England and New York. New Haven, 1821. I, p. 129.

[2] Evolution in Art, p. 330.



BONE BOX FOR SHELL MONEY. HÛPA INDIANS.

trade routes "and are distributed far and wide, it does not always necessarily follow that the ornamentation itself is naturalized. It is possible that in many cases a certain style of decoration is associated with a particular kind of object, and it might not occur to people to transfer that decorative style to other objects, or at all events the process would doubtless be slow."

An interesting example of bone dress ornaments, bearing simple decorations and common to both the eastern Eskimo and the Nascopi, as well as the now extinct Beothuk Indians of Newfoundland, was brought to my attention by Professor O. T. Mason, Curator of Ethnology in the National Museum.

The specimens are reproduced in colored and plain sketches, and presented to the National Museum by Lady Blake, of the Government House, St. Johns, Newfoundland.

The illustrations represent the primitive bone ornaments worn about the bottom of dresses prior to the use of metal substitutes, such as are now attainable from the whites. These ornaments are chiefly of a class which represent an inverted narrow letter V—thus, ∧—each about 2 or 2½ inches in length and decorated with various angular designs. Some of them have marginal incised lines, within which and attached thereto are the base of triangular or serrated markings similar to some Eskimo patterns, shown in various illustrations.

Upon the ends of some other small horn ornaments are similar rude zigzag patterns, as shown in other illustrations of Eskimo workmanship.

The information is obtainable as to the conceptions which gave rise to the art patterns of the Beothuk. The simple zigzag may have resulted from an incised imitation of some notched ornaments made by Nascopi, ornaments such as the Beothuk were undoubtedly familiar with, as both varieties are shown upon the same plates of illustrations made by Lady Blake. By laying the Nascopi ornament upon the slab of horn used by the Beothuk, the incised serrations forming the border almost exactly fit to the zigzag or serrated ornamentation forming a border near the edge of the piece used by the latter.

Several patterns occur in Eskimo decorations, however, which, while not exactly resembling patterns from other parts of the world, appear to have originated with them, and were suggested to them by original products or mechanical contrivances, as the Siberian kantag or wooden buckets, in nests of several sizes, and the peculiar fish trap or run placed in narrow channels of water, and perhaps the guides to the pitfall. To the latter class of ornamentation may be placed the "seal-tooth" pattern. These two different types of objects may have suggested the motive for the figure of concentric circles and the rude zigzag, respectively; or the introduction from without the territory of the Eskimo of these designs—the former, for instance, through the influence of the Russians, and the other, perhaps, from the vicinity of

Torres Straits and adjacent territory—may have been seized upon as suggesting the outlines or concepts perceived in the native products, the possible difference in artistic results being dependent upon the difference in material upon which the designs are portrayed and to the expertness or lack of skill of the Eskimo copyist or artist.

Upon a careful examination of all available materials bearing pictorial records or only simple decorative designs, several interesting facts appear.

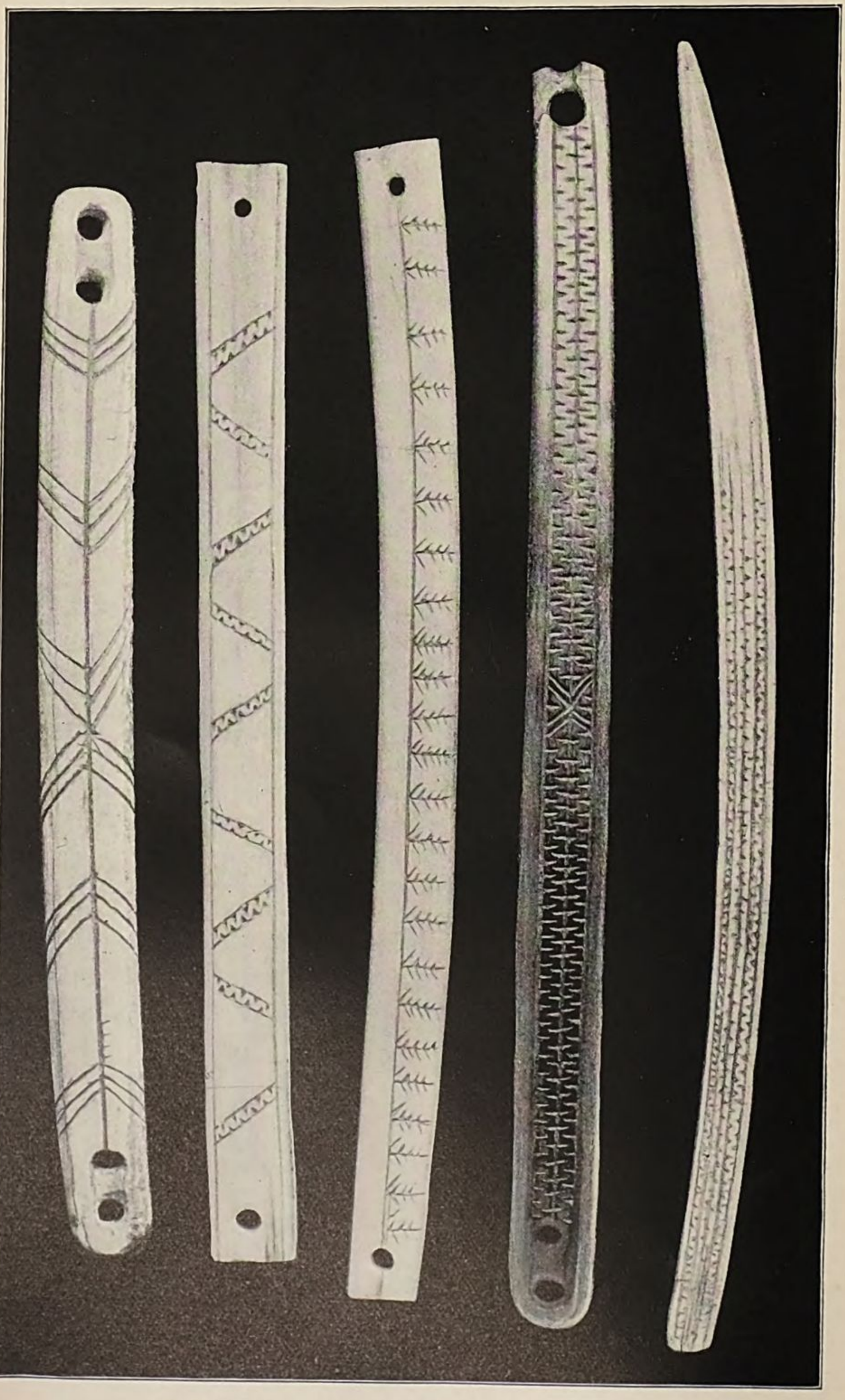
First. That the Eskimo east of Point Barrow, including those even of Labrador and Greenland, exhibit but little artistic expression, this being confined chiefly to lines, dots, and other similar rudimentary markings which are employed almost wholly for decorative purposes. This does not refer to various kinds of carvings and outlined flat figures in bone or ivory, which are intended to be stitched to clothing, a custom very much resembling a like practice which obtains in Finland. Neither does this refer to the custom of stamping designs upon cloth or buckskin, a practice apparently learned from the several Algonkian tribes with which some of the Hudson Bay and Labrador tribes of Eskimo come in contact.

Second. That the Point Barrow natives are apparently but moderately advanced in the art of recording tribal or individual events, customs, etc., and that most of their ivory utensils are not decorated; but that where attempts at beautifying are apparent, only those designs are adopted which suggest or require the least amount of manual exertion and artistic ability, so that straight incisions, creases, or grooves are most numerous, while nucleated circles, and rarely also a few concentric rings, are incised, the latter apparently by means of the common carpenter's auger bit, properly filed at the cutting edge so as to produce a scratch instead of an incision, the latter being too delicate and tedious a process for success in removing the dense resisting particles of ivory.

Third. That the engravings on ivory and bone from the northern portion of the west coast of Alaska, embracing the region about Kotzebue Sound and northward, and including Diomede Islands and the opposing coast, as well as the area occupied by the Asiatic Eskimo, are more deeply and crudely cut, as indicated by the lines being broader and bolder than in the products from any other area.

Fourth. That the general results in graphic portrayals are more artistic among the natives of Bristol Bay and Norton Sound, and improve in delicacy of engraving toward the southward even to and including the Aleutian Islands; that the portrayal of animal forms is accomplished with such fidelity as to permit of specific identification; that the attempt at reproducing graphically common gesture signs becomes more frequent, and various instances of the successful portrayal of subjective ideas also occur.

In his reference to the Agulmuts, whose location extends from near



HANDLES BEARING PRIMARY FORMS OF DECORATIONS.

EXPLANATION OF PLATE 31.

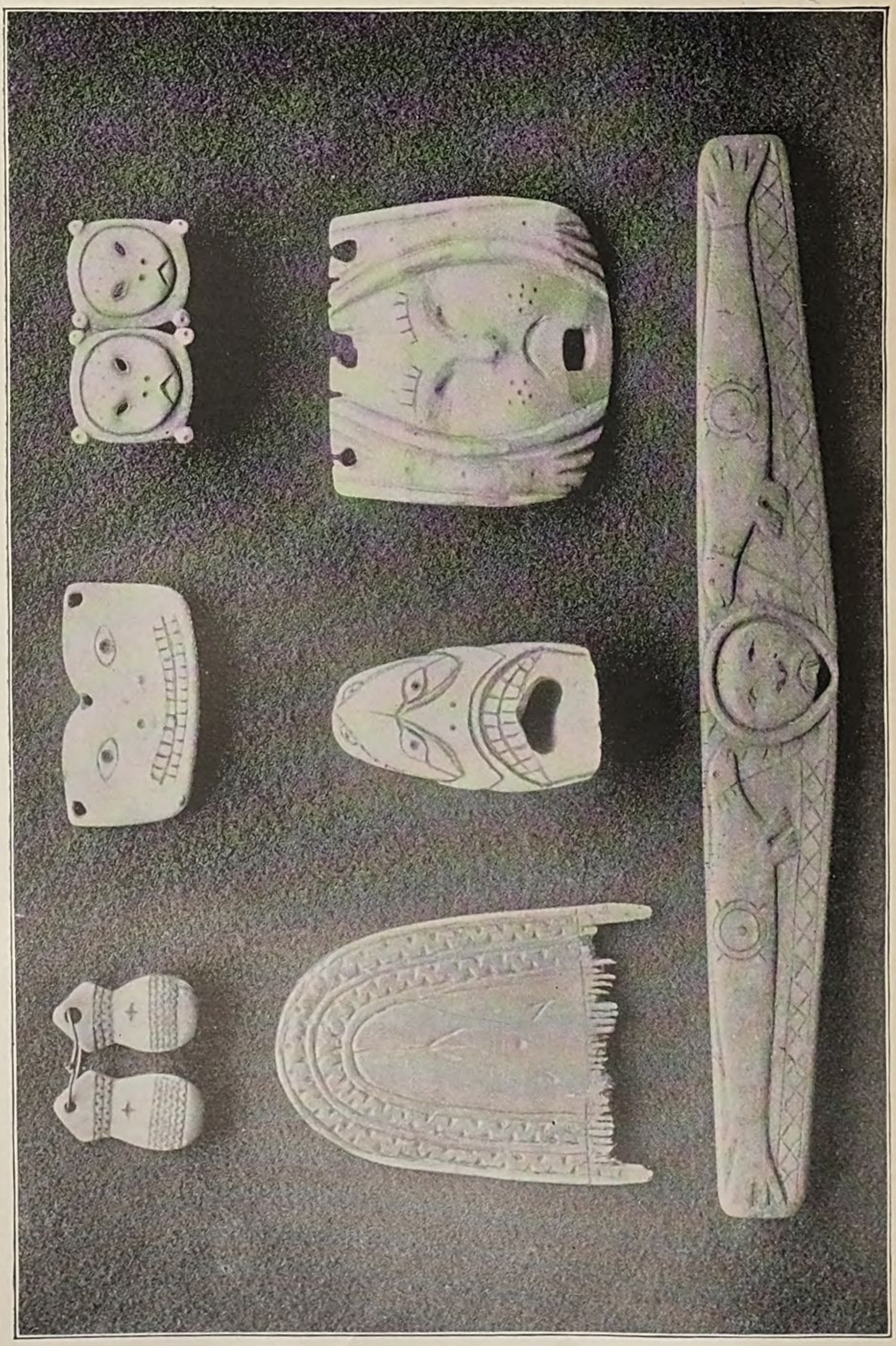
Fig. 1. Bag Handle.
(Cat. No. 38752, U. S. N. M.)

Fig. 2. Bag Handle. Fish-trap or Seal-tooth Pattern.
(Cat. No. 24412, U. S. N. M. Norton Sound. Collected by L. M. Turner.)

Fig. 3. Bag Handle. Pine-tree Pattern.
(Cat. No. 24417, U. S. N. M. Norton Sound. Collected by L. M. Turner.)

Fig. 4. Bag Handle. Variant of Fig. 2.
(Cat. No. 38776, U. S. N. M. North of Norton Sound. Collected by E. W. Nelson.)

Fig. 5. Bodkin. Parallel Rows of Seal-tooth Pattern.
(Cat. No. [?]. Norton Sound. Collected by E. W. Nelson.)



DECORATED ORNAMENTS.

EXPLANATION OF PLATE 32.

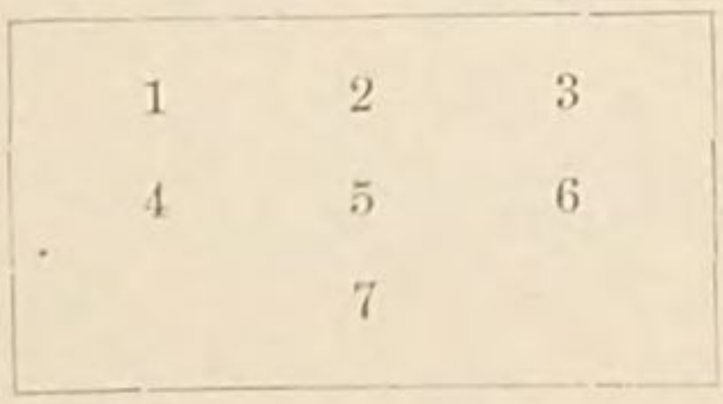


Fig. 1. IVORY EAR PENDANTS; MADE OF BELUGA TEETH.
(Cat. No. 33491, U. S. N. M. St. Michaels. Collected by E. W. Nelson.)

Fig. 2. BUCKLE; GIRLS' HAIR ORNAMENT.
(Cat. No. 37007, U. S. N. M. Agaiyukchugumut. Collected by E. W. Nelson.)

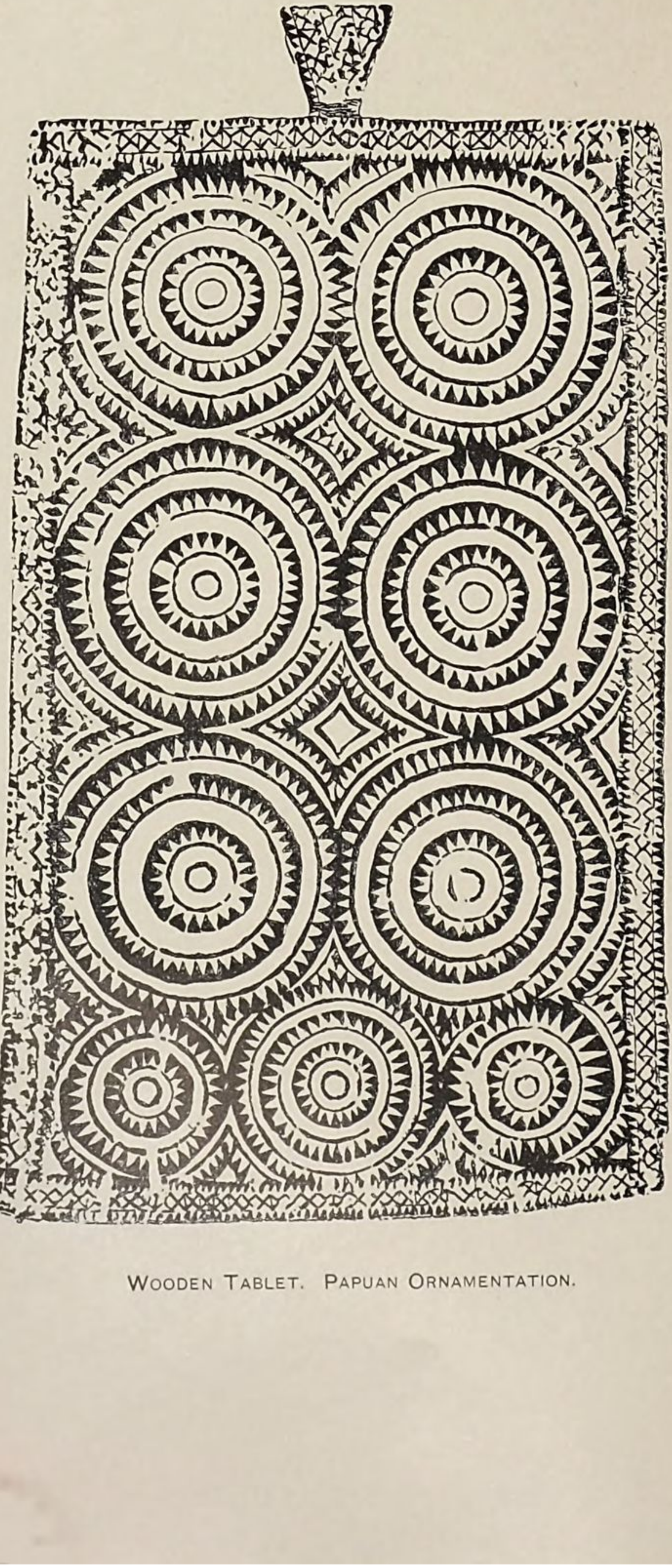
Fig. 3. EAR PENDANTS; REPRESENTING SEAL HEADS.
(Cat. No. 38052, U. S. N. M. Spugunugumut. Collected by E. W. Nelson.)

Fig. 4. COMB.
(Cat. No. 48174, U. S. N. M. Cape Prince of Wales. Collected by E. W. Nelson.)

Fig. 5. UTENSIL OF IVORY. THLINGIT INDIANS (?).

Fig. 6. IVORY ORNAMENT CARVED TO REPRESENT FACE OF A SEAL.
(Cat. No. 37763, U. S. N. M. Kongiqunogumut. Collected by E. W. Nelson.)

Fig. 7. CARVED HANDLE, SHOWING HUMAN FACES WITH TATTOOING.
(Cat. No. 37319, U. S. N. M. Chalitmut. Collected by E. W. Nelson.)



WOODEN TABLET. PAPUAN ORNAMENTATION.

Cape Avinoff nearly to Cape Romanzoff, Mr. Dall[1] remarks that they have been reported as remarkable for the beauty of their workmanship in ivory. "A kántag or wooden dish," he continues, "which was obtained at Núnivak by Captain Smith, was neatly carved and inlaid with lozenges of white stone resembling gypsum. They were labrets of the same material. Their food was principally fish and seal, and they appeared to be very destitute of iron and other articles introduced by traders. Their ivory weapons were of great beauty, and some specimens of hollow carving would tax the resources of the most skillful civilized workman to equal."

In addition to the above named facts there occur other peculiar patterns, two of which are of interest; they are respectively the figures of concentric circles, and a Papuan-like zigzag design, to which reference has already been made. The former is frequently a nucleated circle, frequently regularly incised series of circles one beyond the other, and occasional instances in which delicate radiating lines are attached to the outer ring.

The other pattern is like, and yet unlike, that found in Papuan decorations, in which is a rude wavy or meander zigzag, or even more sharply defined interdigital lines, or perhaps even triangular projections so as to form true serrations, resulting in what is sometimes termed a tooth pattern.

This particular form of Papuan art is usually drawn between or within parallel lines, and extends transversely across the specimen decorated. The Eskimo resemblances, if they may be so termed, are represented on plate 31, figs. 2, 4, and 5.

Plate 32, fig. 4, represents an Eskimo comb, the curves upon which form an interesting example for comparison with the Papuan designs upon a tablet of wood, referred to and illustrated by Mr. Stolpe, of Stockholm.[2] Plate 33.

Similar parallel lines carrying between them the same style of a rude zigzag, but in relief, because the alternate triangular spaces have been removed by cutting, occur upon various other specimens represented in various plates and illustrations.

The short transverse bars in this type of pattern represent in some instances, according to an Alaskan informant and pictographer, Vladimir Naomoff, conventionalized fish traps, such as are placed in narrow channels of water for catching the migrating salmon. A symmetrical trap of such construction is shown on the faces of a pipe in plate 60. The transverse lines or bars are complete in this illustration, however, yet the decorative or evolved figure is easily traceable to the original. A simpler form of the same pattern appears in the decoration on fig. 4 in plate 31, where the alternate short lines project inward toward the opposing space between the short lines.

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[1] "Alaska and its Resources," Boston, 1870, p. 406.

[2] Stolpe, Utveklingsföreteelser i naturfolkens ornamentik. Ymer, Stockholm, 1890, 4°, pp. 193–225; 1891, pp. 197–229, figs.

The native drawings of the so-called fish trap or seal tooth pattern also resemble the approaches to the game trap or inclosure, both these contrivances being represented by horizontal or oblique or perhaps even only parallel lines, leading to a trap or inclosure, along which lines are short etchings or bars to denote the posts or divisions to sustain the brush of the game drive or the wickerwork partitions of the fish trap. These short lateral lines simulate the drawings made to denote the separations or spaces between teeth like those of the seal, of which examples are given in fig. 00, and, as was suggested by a native Eskimo, the open mouth of the hunting seal was like the open fish trap and game drive, ready to take in such prey as came within reach. The conception of the design may be found in the trap, as suggested by Naomoff, or in the "seal's mouth," as suggested by Nomikséner, a Kaviagmut Eskimo from Port Clarence, whose portrait is shown in plate 2.

These drawings in ivory are usually placed between horizontal or parallel lines, interesting because they resemble the chief characteristics of Celtic art, of which there is no relationship directly except as showing the like workings of man's mind under like conditions. "The Japanese, for instance," says a writer in Archæologia Cambrensis,[1] "ignore the margin altogether and make their decoration entirely independent of it, but in Celtic art the patterns are all designed to suit the shape of the margin." This is true of much of the Alaskan art.

The early contact by the Alaskans with art products from the South Pacific is believed to be pretty generally recognized; and an instance of the discovery among the natives of Bristol Bay of the cocoanut suggested an admirable material for engraving which was only surpassed in beauty and texture by walrus ivory. Various curios have also been carried north by sailors, the carvings upon which have suggested, no doubt, possibilities in engraving of which the Eskimo had previously had no conception. Illustrated newspapers are seized with avidity, and reproductions of various cuts attempted, in some known instances the features of faces being fairly truthful likenesses.

Much of the art of the Eskimo has been influenced, too, by the introduction of articles of Russian manufacture, of which more is remarked elsewhere. Two fairly good examples of native workmanship of this are given on plate 34, figs. 1 and 2, and representing wooden boxes with native ornamentation and Russian symbols of the cross and other motifs.

The suggestion for engraving concentric circles being accounted for as to origin and signification by Mr. L. M. Turner, and described farther on, may also have been introduced through the medium of sailors and others from the Gulf of Papua, where, according to Mr. Haddon, they are conventionalized eyes in the ornamental faces carved on wooden belts.

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[1] January, 1893. Fifth ser., pp. 20, 21.

EXPLANATION OF PLATE 34.

Fig. 1. Wooden Box.

(Cat. No. 44457, U. S. N. M. Cape Nome. Collected by E. W. Nelson.)

Fig. 2. Wooden Box.

(Cat. No. 33077, U. S. N. M. Cape Nome. Collected by E. W. Nelson.)

Fig. 3. Box for Fishing Tackle.

(Cat. No. 24352, U. S. N. M. Norton Sound. Collected by L. M. Turner.)

WOODEN BOXES, AND CASE FOR FISHING TACKLE.

In Alaska, however, concentric circles and nucleated rings have been utilized to explain concepts other than the similar patterns which occur elsewhere in the world, referring to other widely distinct origins and concepts. (Compare with variants on plate 17.)

The concentric rings, being so generally widespread, survive in the Kongo region and in Tangier, where the design may owe its origin to the introduction of Mohammedanism and the Byzantine style of ornamentation; upon Roman lamps in the ruined church of St. Louis, in Carthage; and in numerous localities throughout northern Europe as rock sculpturings, and in bronze and other jewelry and ornaments. America has many petroglyphs in which this design is found, the greatest number being upon the basalt rocks in the arid desert south of Benton, Owens Valley, California.

By these references to the occurrence in widely separated localities of like designs, I do not for a single moment desire to convey the impression that the belief is entertained that this is the result of migration through the ordinary trade, or culture channels, as Mr. Haddon designates them, but rather of independent development, being evolved from very diverse originals and concepts. It is certain, nevertheless, that in some instances religious symbols are carried among peoples to whom they are artistically or technically foreign, and to whom the signification would be meaningless but for the explanation accompanying them.

In Alaska several different versions are given to account for the origin of the nucleated circles, plain concentric rings, and rings with dentations. Reference to like forms in other regions is made elsewhere.

Mr. Haddon[1] remarks with reference to such figures that "there is a great tendency for spirals to degenerate into concentric circles; examples could be given from New Guinea, America, Europe, and elsewhere. In fact, one usually finds the two figures associated together, and the sequence is one of decadence, never the evolution of spirals from circles. The intermediate stage has been aptly termed a 'bastard spiral' by Doctor Montelius—'that is to say, concentric circles to which the recurved junction lines give, to a casual glance, the appearance of true spirals.'"

Interesting instances in support of Mr. Haddon's statement are found in the development of decorative designs among various tribes of Indians, in which the textile designs were ultimately imitated in a free hand style, thus gradually converting the angular into curved figures, as in the meander patterns so common in the basketry and pottery designs of the several pueblo tribes.

In northern Europe and elsewhere in the Old World coils of withes, cords, and other textile strands were imitated in metal, as may be seen in many of the prehistoric relics of Scandinavia and France.

Associated with these patterns are series of figures consisting of

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[1] "Evolution in Art," p. 93.

concentric rings, which no doubt owe their origin to the vegetal prototype.

Thus far no spirals have been observed in the native art designs of the Eskimo as illustrated in the National Museum, and one reason for the absence of spirals may be attributed to the difficulty of engraving the ivory satisfactorily, or perhaps to the absence of particular life forms which might under other circumstances suggest such motifs. The general shape of the spaces upon drill bows, being long and narrow, would otherwise naturally suggest either a meander or a continuous series of squids as a most appropriate and convenient pattern. Instead of these, however, the ornamental "filling-in" consists of straight lines of various lengths and at various angles, together with animal or bird forms in various stages of abbreviation through conventionalization.

DECORATION CONSISTING CHIEFLY OF LINES, DOTS, AND ZIGZAGS.

The older forms of ornamentation, as already indicated, seem to consist of straight lines, dots, and <-shaped incisions, while the apparently later ones are the circles, made by metal instruments possibly of native workmanship, and the rude zigzag or meander. The application of these several types of designs to the ornamentation of various articles of use is represented in the next few pages. Some interesting examples of figure carving, bearing engravings of various types, are also reproduced.

While the rude zigzag pattern is frequently alluded to as the "fish trap" pattern—the name being deemed appropriate because the type originated in that contrivance, according to Naomoff—the designation "seal tooth" pattern might be equally appropriate, as the arrangement of the teeth and spaces between them may have suggested the pattern among tribes in other parts of the Eskimo territory.

Plate 35, fig. 8, shows a woman's skin scraper, from Cape Darby. The specimen appears to be made of fossil ivory and is carved in imitation of a whale's tail, and rounded so as to fit the palm of the hand. The front end has a deep incision, in which was placed at one time a flint scraper, in imitation of other examples in the collection of the National Museum. The specimen bears beneath a depression, showing it to have been used for holding the top of a drill. The ornamentation on both sides and transversely at the rear portion consists of a single line to which are attached irregular short radiating or transverse lines in imitation of the rudest type of the "fish trap" pattern. This ornamentation is in accordance with the typical ornamentation of the Eskimo, such as comes from the shell heaps of the Aleutian Islands, across to the east coast of Greenland, and antedating very likely the historic period.

In plate 31, fig. 5, is shown an ivory bodkin, here reproduced as of interest in presenting upon the one side five parallel lines of unequal

EXPLANATION OF PLATE 35.

Fig. 1. THIMBLE GUARD.
(Cat. No. 43459, U. S. N. M. St. Michaels. Collected by E. W. Nelson.)

Fig. 2. THIMBLE HOLDER.
(Cat. No. 29731, U. S. N. M. Norton Sound. Collected by L. M. Turner.)

Fig. 3. THIMBLE HOLDER.
(Cat. No. 129314, U. S. N. M. St. Michaels. Collected by E. W. Nelson.)

Fig. 4. SEINE THIMBLE HOLDER.
(Cat. 36452, U. S. N. M. Kushunuk. Collected by E. W. Nelson.)

Fig. 5. MOUTHPIECE.
(Cat. No. 63667, U. S. N. M. Diomede Islands. Collected by E. W. Nelson.)

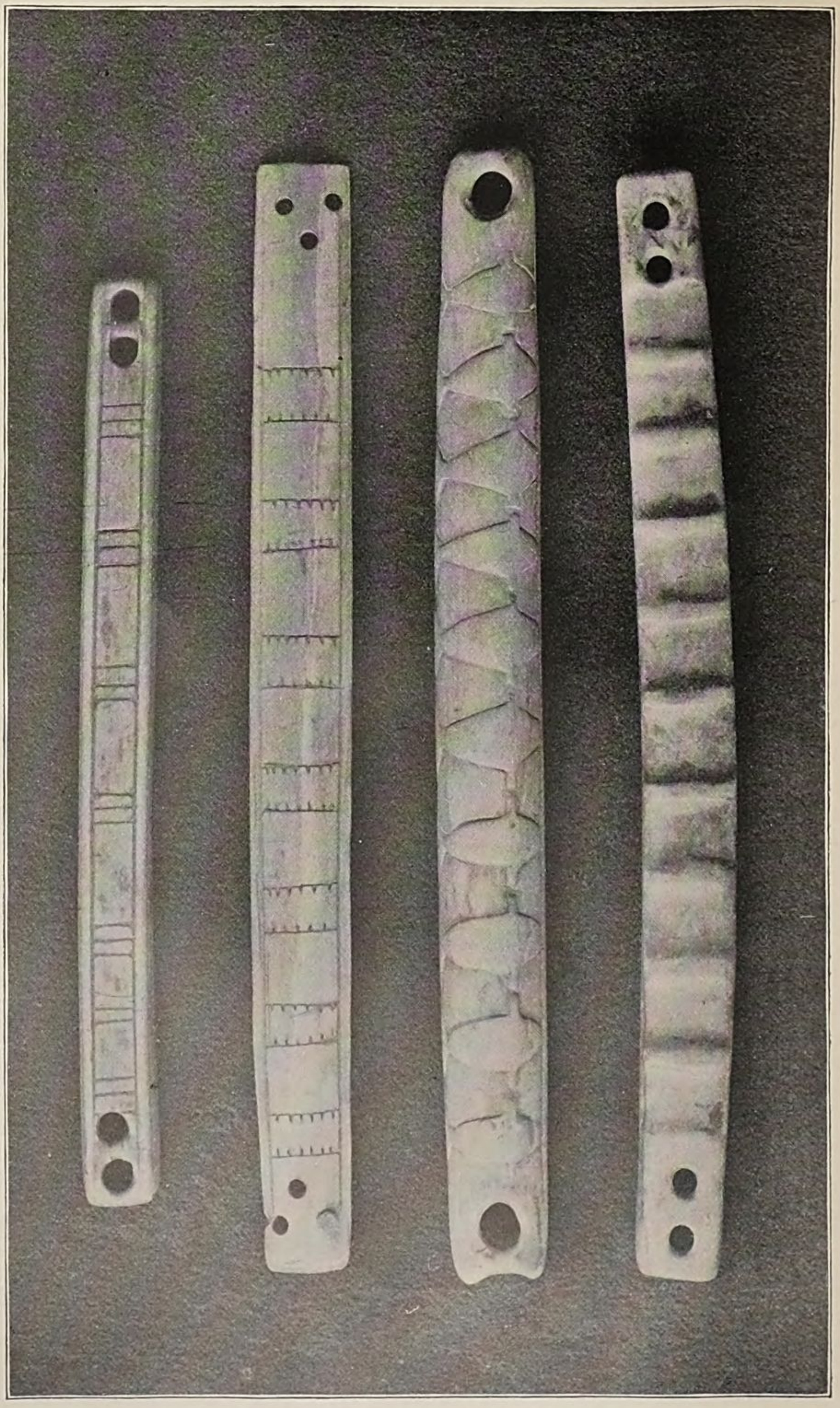
Fig. 6. THIMBLE GUARD.
(Cat. No. 43861, U. S. N. M. Unaliklut. Collected by E. W. Nelson.)

Fig. 7. MOUTHPIECE.
(Cat. No. 63666, U. S. N. M. Diomede Islands. Collected by E. W. Nelson.)

Fig. 8. HANDLE OF SCRAPER.
(Cat. No. 44180, U. S. N. M. Cape Darby. Collected by E. W. Nelson.)

Fig. 9. TOBACCO BOX.
(Cat. No. 44766, U. S. N. M. Sledge Island. Collected by E. W. Nelson.)

DECORATED UTENSILS USED BY WOMEN.



ORNAMENTED KANTAG HANDLES.

EXPLANATION OF PLATE 36.

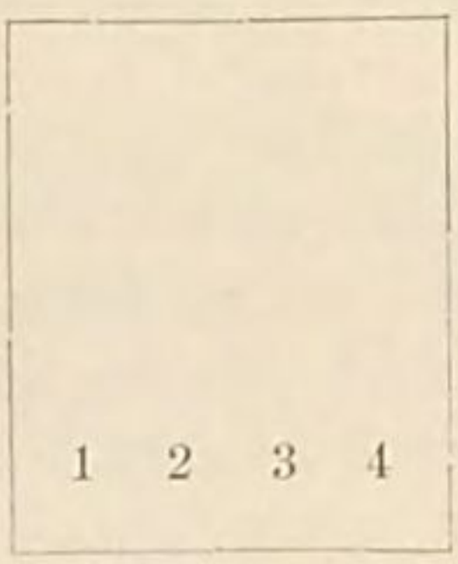


Fig. 1. KANTAG HANDLE.
(Cat. No. 43809, U. S. N. M. Ishaktolik. Collected by E. W. Nelson.)

Fig. 2. KANTAG HANDLE.
(Cat. No. 44276, U. S. N. M. Cape Darby. Collected by E. W. Nelson.)

Fig. 3. KANTAG HANDLE.
(Cat. No. 24730, U. S. N. M. St. Michaels. Collected by L. M. Turner.)

Fig. 4. KANTAG HANDLE.
(Cat. No. 45155, U. S. N. M. Sledge Island. Collected by E. W. Nelson.)

length, between which are the short lateral lines and zigzag, showing the method of engraving and the artistic evolution of the pattern.

Plate 36, figs. 1–4, represent kantag handles. The specimen shown in fig. 1 is from Sledge Island, and is ornamented by two parallel longitudinal lines between which are cross lines by threes at intervals of about an inch. In fig. 2 the sets of cross lines are by twos, but on the inner side, facing one another, are short lines, as in the ornamental pattern before referred to as the fish trap or seal tooth, giving rise ultimately to the zigzag. In fig. 3 is represented a handle, upon the upper side of which the ornamentation consists of ten whales in relief, while upon the under side is a very neatly engraved mammal of the same species, though extending horizontally instead of transversely.

In fig. 4 the upper side represents two horizontal lines with the short lines extending inward between their opposing fellows, a sort of interdigitation, the interior spaces representing a rude zigzag with the outer angles being removed instead of being shaped to a point, as in the true zigzag.

In the next illustration of a bag handle, plate 31, fig. 4, are three parallel lines extending from end to end. From the outer lines inward are short lines at intervals of perhaps $\frac{1}{8}$ of an inch, while extending to either side from the central line are similar short lines extending outward so as to project between the short lines from without—a sort of interdigitation, resulting in a double row of the "fish trap" pattern or rude zigzag presented in so many of the illustrations.

Fig. 2 of the same plate also bears a series of like ornamentation, the concept perhaps also being found in the fish trap.

Plate 37, fig. 3, represents a bow, one end of which terminates in an animal's head, while about the neck, the middle, and the rear end are parallel lines, from the inner side of which and approaching the opposite side are small triangular points so arranged alternately from one side to the other as to leave an intervening space in the form of zigzag. This design is very common on work from several particular localities. It is used as an ornament in filling out blank spaces, as in the illustration (fig. 6 on the same plate, 37), where it serves to decorate seals' skins, seventeen of them being placed in a row. This may be compared with like illustrations in connection with conventionalizing.

Plate 31, fig. 1, represents a bag handle, locality unknown, upon which is shown a pattern consisting primarily of a central incision extending from end to end, from which radiate toward either side several series of diagonal lines, which appear to be similar in type to that shown in plate 38, fig 1, and on plate 39, fig. 2.

On plate 34, fig. 1, is a small wooden box obtained at Cape Nome. It has a sliding lid, while the two lower projections, resembling feet, are in reality the outlines of bears' heads. As will be noted, there are several outlines of flintlock guns shown upon the lid, besides other characters, while along the margin are short diagonal lines arranged

in the form of zigzags. A few Russian letters are incised upon the sides, indicating the natives' knowledge of, or acquaintance with, characters of that language.

In plate 34, fig. 2, is represented a box of almost the same form and from the same locality, the bottom being represented in the illustration, and upon it a variety of ornamentation very much in imitation of the patterns before mentioned and found on many of the specimens. Upon closer investigation, however, it will be observed that the marginal lines bear between them small arrowheads or <-shaped figures, while in the remaining spaces the ornamentation consists of parallel lines, the intervening spaces being ornamented by short diagonal lines. The two lozenges in the middle bear upon the center a cross, evidently suggested by Russian ecclesiastical pictures or literature.

Plate 37, fig. 1, is a plain white ivory bow drill from Point Hope. The ornamentation is visible in the illustration and consists simply of the wavy exterior produced by filing a series of indentations along the edge of the triangular bow.

Plate 37, fig. 5, also from Point Barrow, shows two parallel lines extending from almost one end to the other, between which are diagonal lines at short intervals. The bottom edge of the bow is indented at intervals of a little over an inch, leaving projections upon which small triangular figures extend from the bottom, presenting an ornamental effect. The coloring matter apparently consists of red ocher.

Plate 38, figs. 1, 2, 3, and 4, represent bag handles from Norton Sound, St. Michaels, the Yucon River, and Point Hope, respectively.

In plate 39, fig. 1, the ornamentation upon the upper side consists of a median horizontal line or crease terminating at one end with three perforations, which number occurs also at the other end of the rod. At right angles to this median line, at either end, are eight nucleated rings. At the center of the specimen are a like number, in the middle of which group is inserted a large blue glass bead. Upon the upper side, instead of a median line, the surface is filled with a continuous row of nucleated circles. Upon examination, however, it is observed that the circles consist of two or three different sizes, showing that instruments of that number of sizes were used. The rings indicate, furthermore, that the tool was of hard metal, but no doubt fashioned by the artist, a narrow piece of steel having a crotch filed into the end so as to leave two sharp points.

Plate 39, fig. 3, represents a very neat bag handle or bow drill nearly 18 inches in length. The top is fluted longitudinally by means of three deep creases, while in the outer sides are a series of cavities or scallops, also ornamented along the margin by incisions. This specimen is interesting because of the great number of nucleated circles scattered along the under side. Each of these circles seems to have been made with the same instrument, which was apparently a carpenter's bit, one-fourth of an inch in diameter.

EXPLANATION OF PLATE 37.

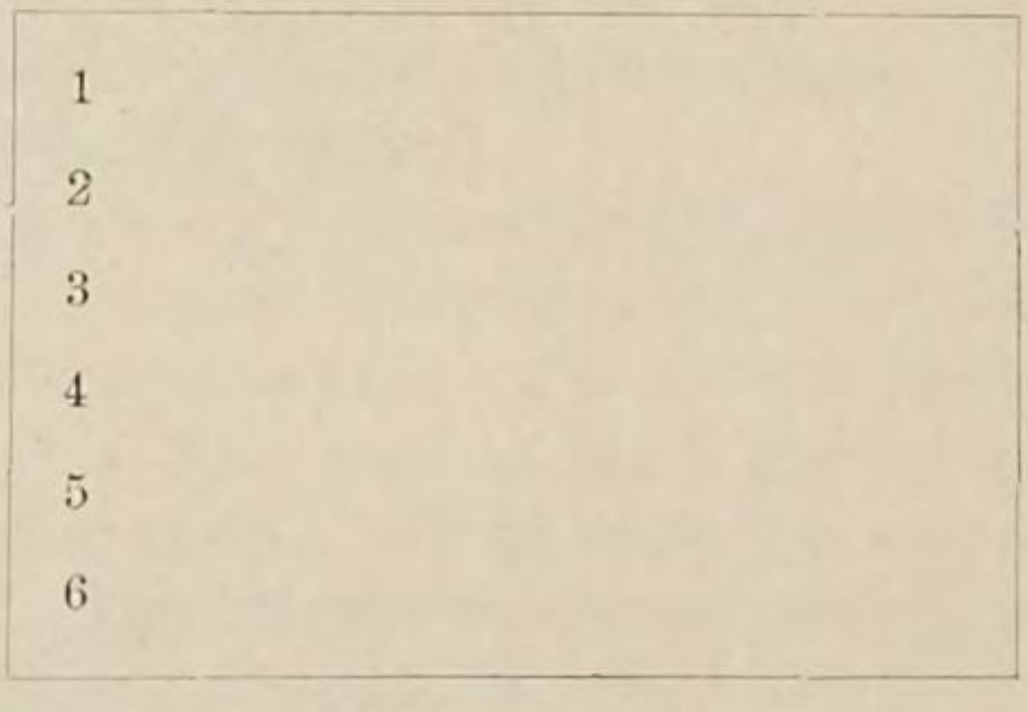


Fig. 1. DRILL BOW.
(Cat. N. 63804, U. S. N. M. Point Hope. Collected by E. W. Nelson.

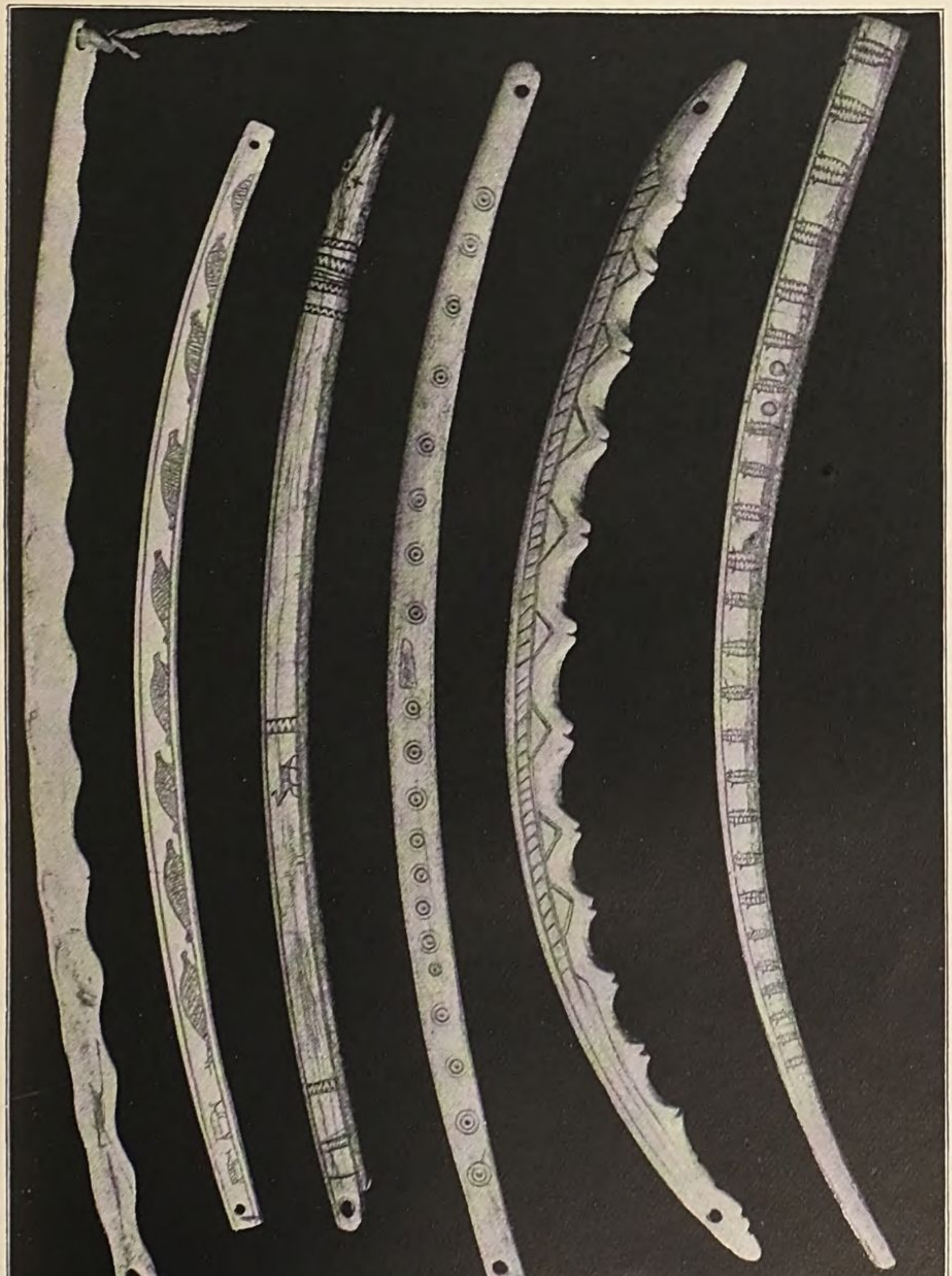
Fig. 2. DRILL BOW.
(Cat. No. 45346, U. S. N. M. Cape Nome. Collected by E. W. Nelson.)

Fig. 3. DRILL BOW.
(Cat. No. 33191, U. S. N. M. Norton Sound. Collected by E. W. Nelson.)

Fig. 4. DRILL BOW.
(Cat. No. 89510, U. S. N. M. Point Barrow. Collected by Lieut. P. H. Ray, U. S. A.)

Fig. 5. DRILL BOW.
(Cat. No. 56518, U. S. N. M. Point Barrow. Collected by Lieut. P. H. Ray, U. S. A.)

Fig. 6. DRILL BOW. This specimen is $24\frac{5}{8}$ inches long.
(Cat. No. 24540, U. S. N. M. St. Michaels. Collected by L. M. Turner.)



ORNAMENTED DRILL BOWS.

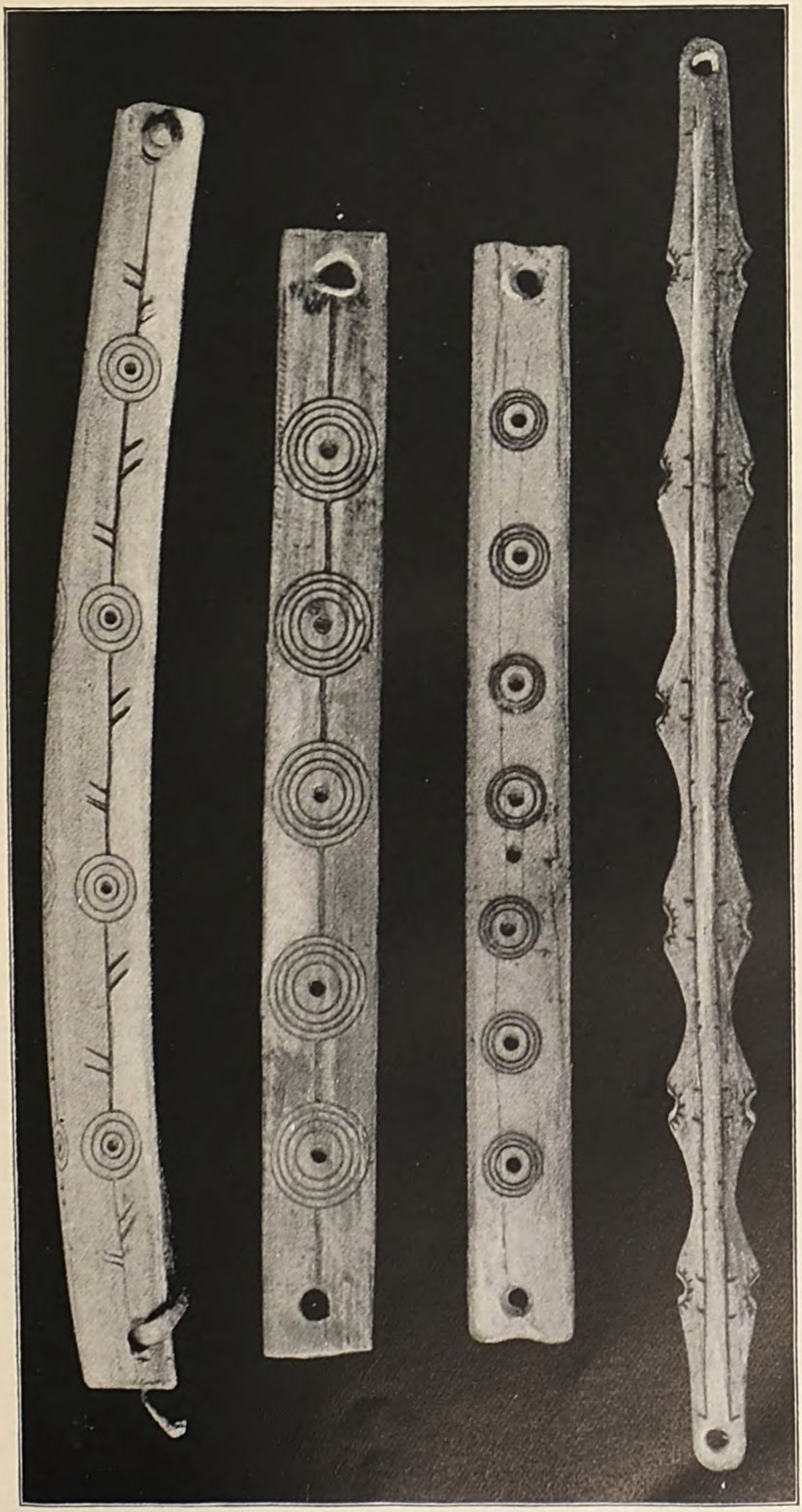
EXPLANATION OF PLATE 38.

Fig. 1. KANTAG HANDLE.
(Cat. No. 24415, U. S. N. M. Norton Sound. Collected by L. M. Turner)

Fig. 2. KANTAG HANDLE.
(Cat. No. 24425, U. S. N. M. St. Michaels. Collected by L. M. Turner.)

Fig. 3. KANTAG HANDLE.
(Cat. No. 38539, U. S. N. M. Yukon River.)

Fig. 4. KANTAG HANDLE.
(Cat. No. 63809, U. S. N. M. Point Hope. Collected by E. W. Nelson.)



ORNAMENTED KANTAG HANDLES.

EXPLANATION OF PLATE 39.

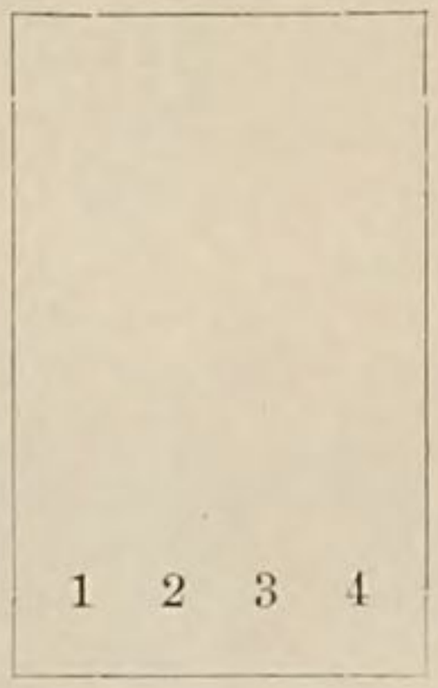
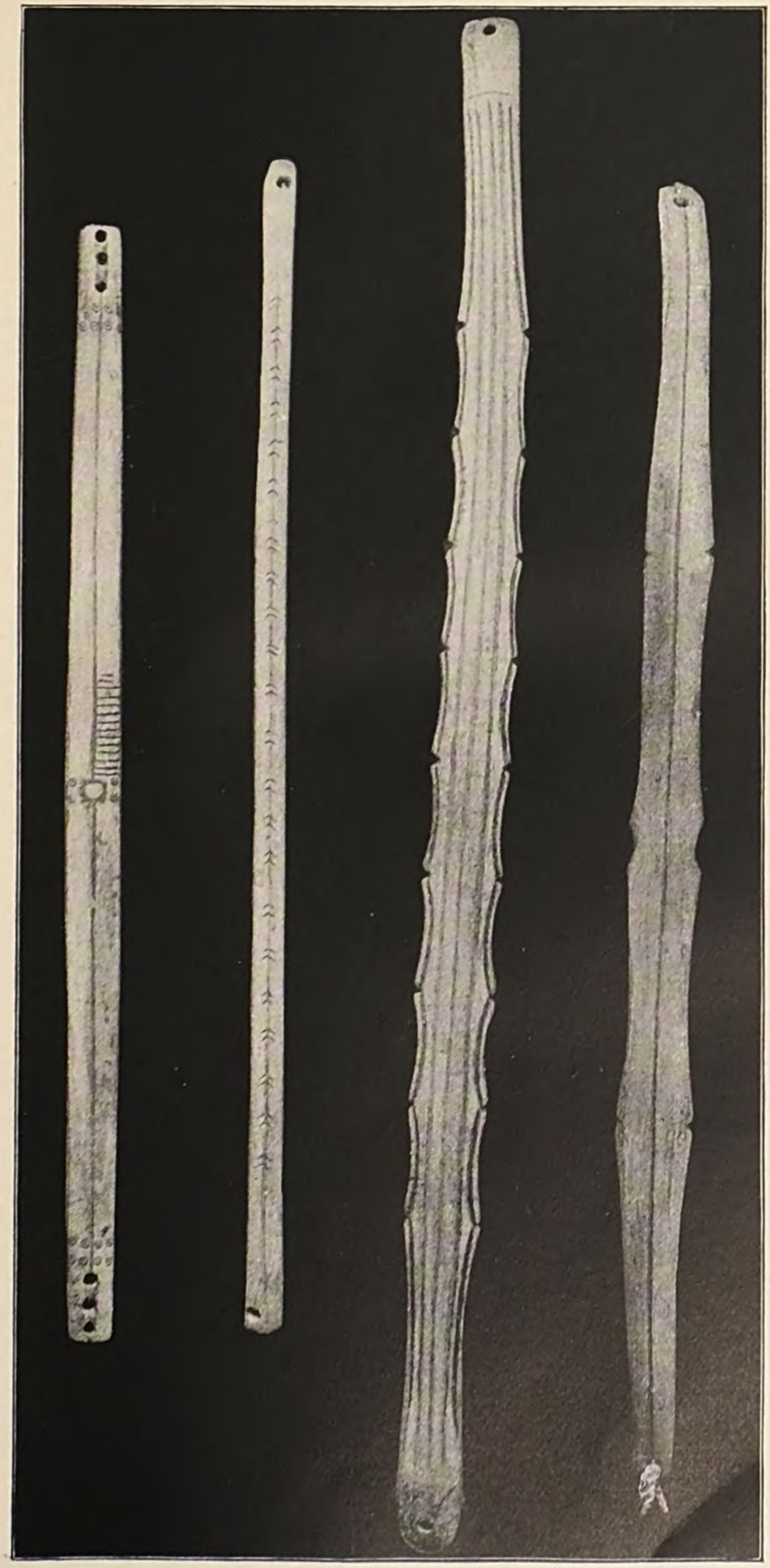


Fig. 1. BAG HANDLE.
(Cat. No. 89511, U. S. N. M. Point Barrow. Collected by Lieut. P. H. Ray, U. S. A.)

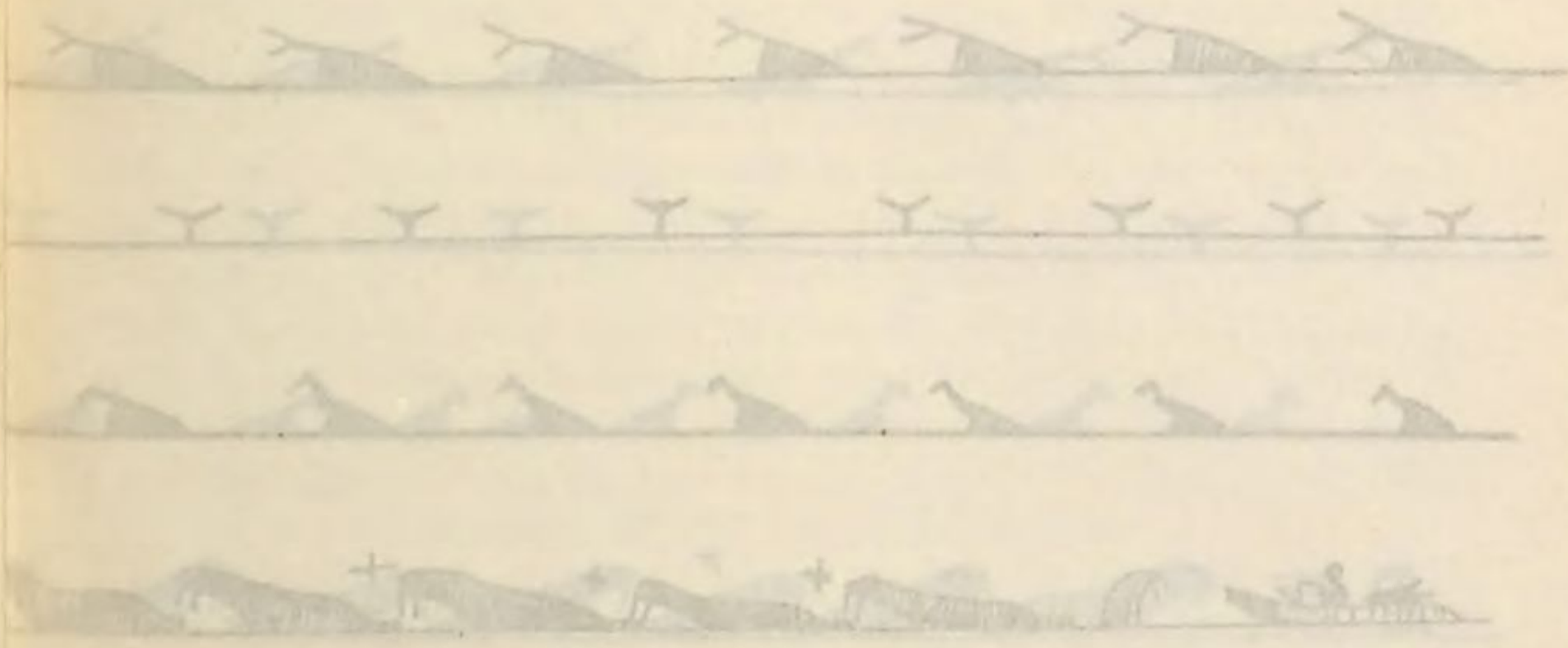
Fig. 2. BAG HANDLE.
(Cat. No. 24549, U. S. N. M. Norton Sound. Collected by L. M. Turner.)

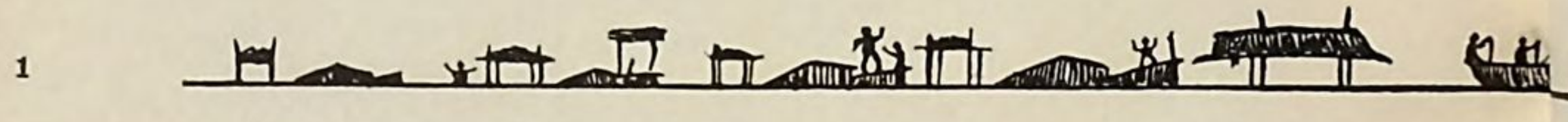
Fig. 3. BAG HANDLE.
(Cat. No. 89423, U. S. N. M. Point Barrow. Collected by Lieut. P. H. Ray, U. S. A.)

Fig. 4. BAG HANDLE.
(Cat. No. 89512, U. S. N. M. Point Barrow. Collected by Lieut. P. H. Ray, U. S. A.)



BAG HANDLES.

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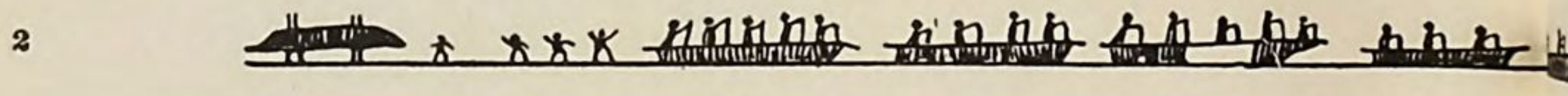
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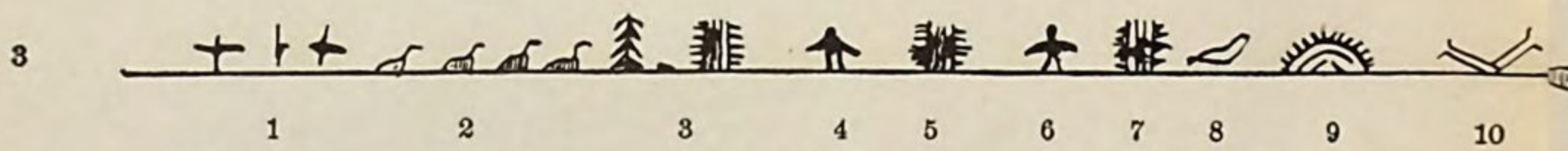
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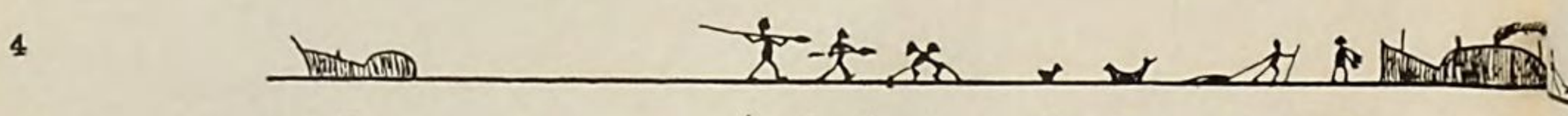
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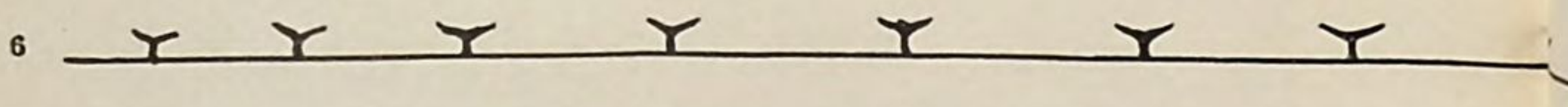
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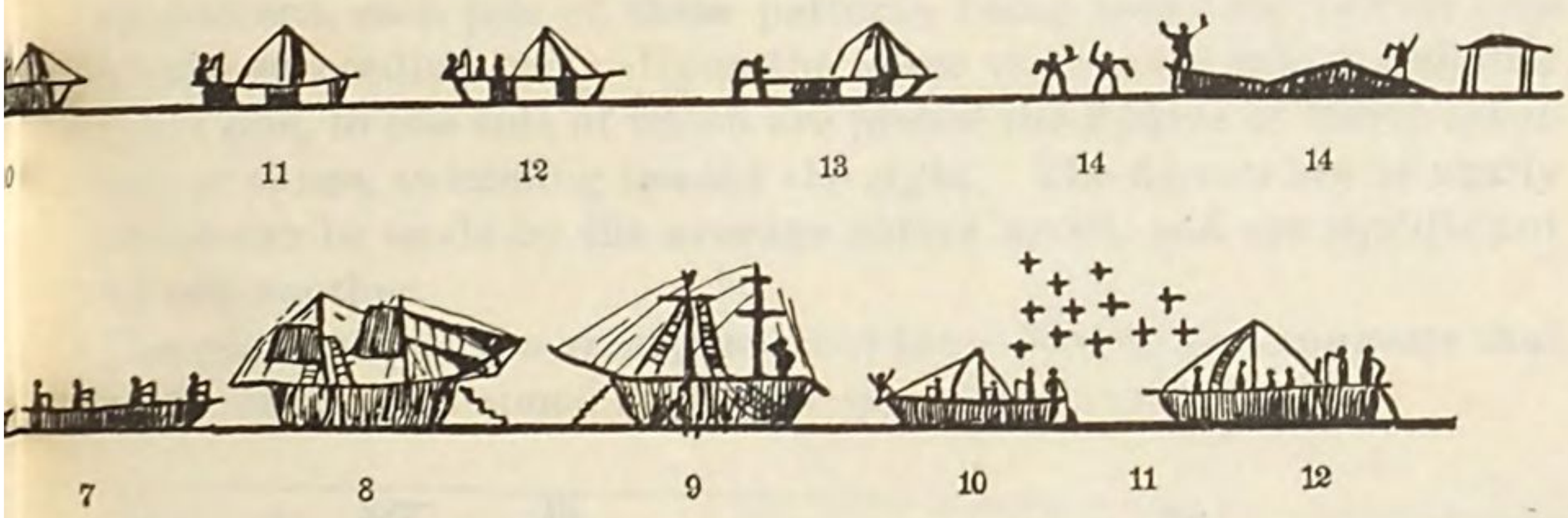
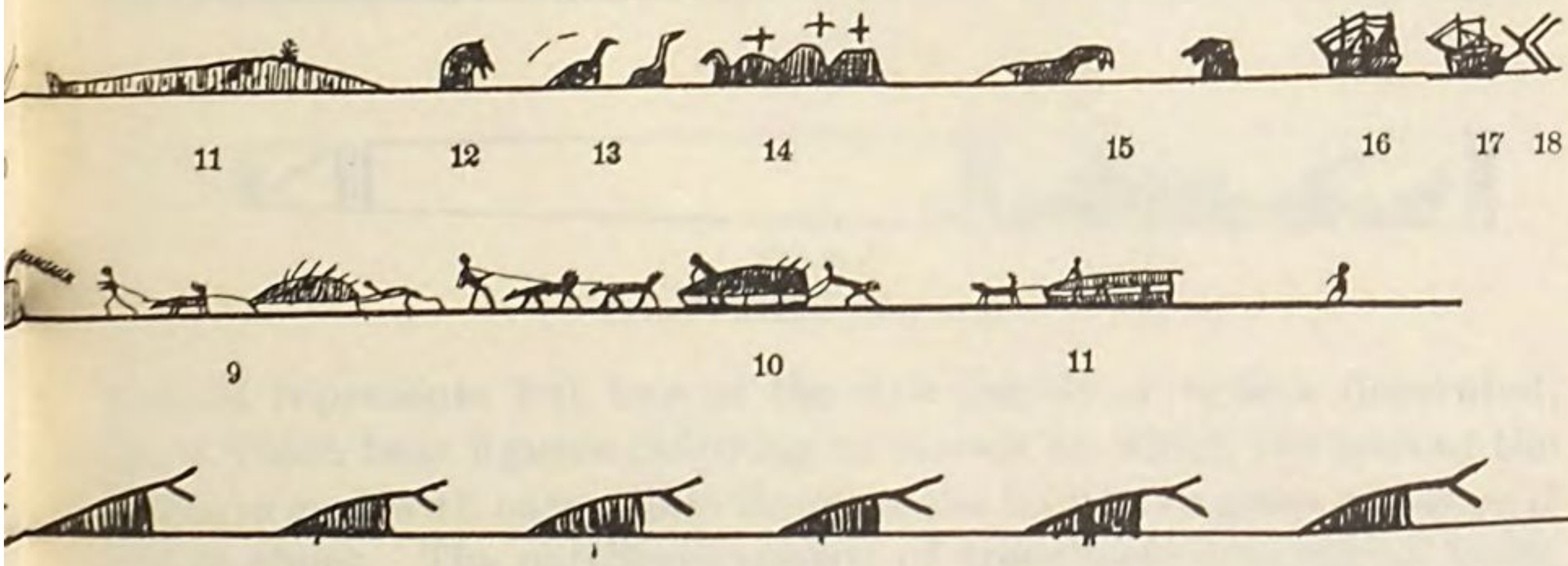
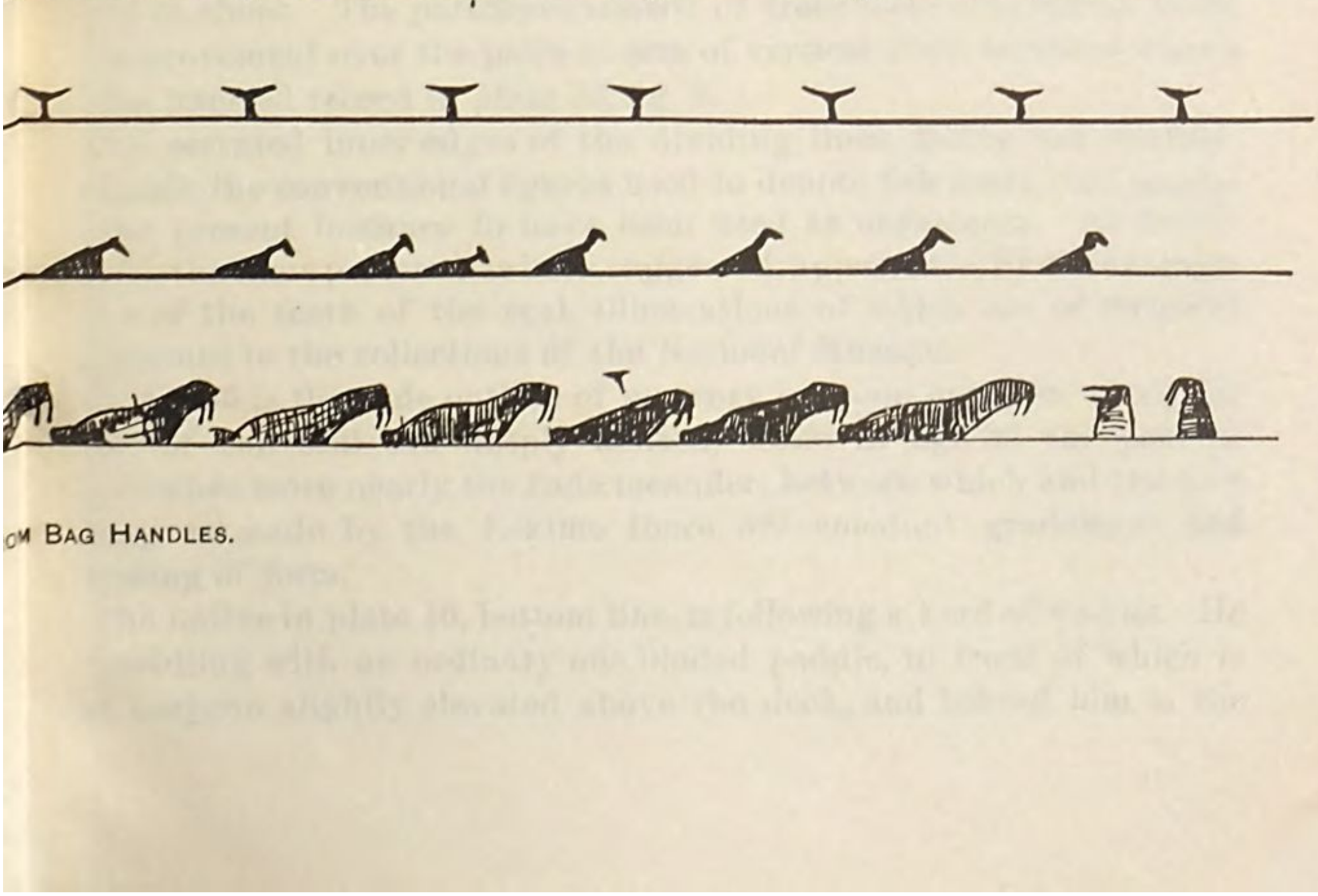






OM BAG HANDLES.

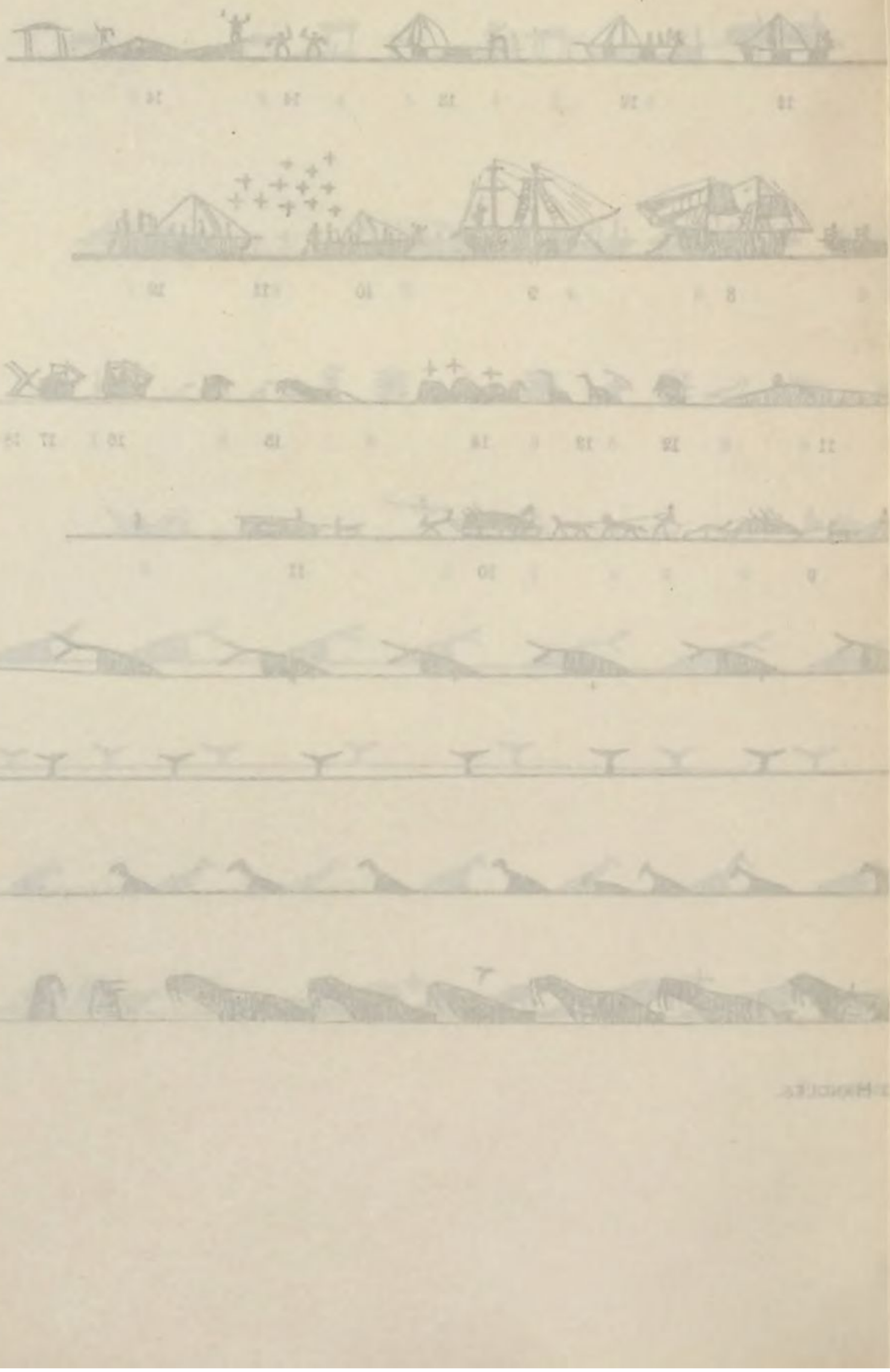


Plate 39, fig. 4, represents a bag handle marked with a single median line from which the specimen slopes toward either side of the outer edge, and it is also fashioned along the outer margin like the preceding one, though the curves or scallops are longer. Between each curve is a small V-shaped niche, while at the middle this is replaced by a short scallop or curve.

The specimen represented in plate 39, fig. 2, is decorated upon the upper side by a median horizontal line, deeply engraved, to which are attached, by pairs, short diagonal lines exactly resembling the herring-bone pattern, each pair of these patterns being about one-half an inch from the succeeding pair. Upon the lower or concave side is a similar median line, to one side of which are placed the figures of thirty-seven geese, or skuas, swimming toward the right. The figures are as nearly alike as can be made by the average native artist, and are equidistant from one another.

The regularity of the arrangement of these bird figures suggests that ornamentation was aimed at as well as a historic record.

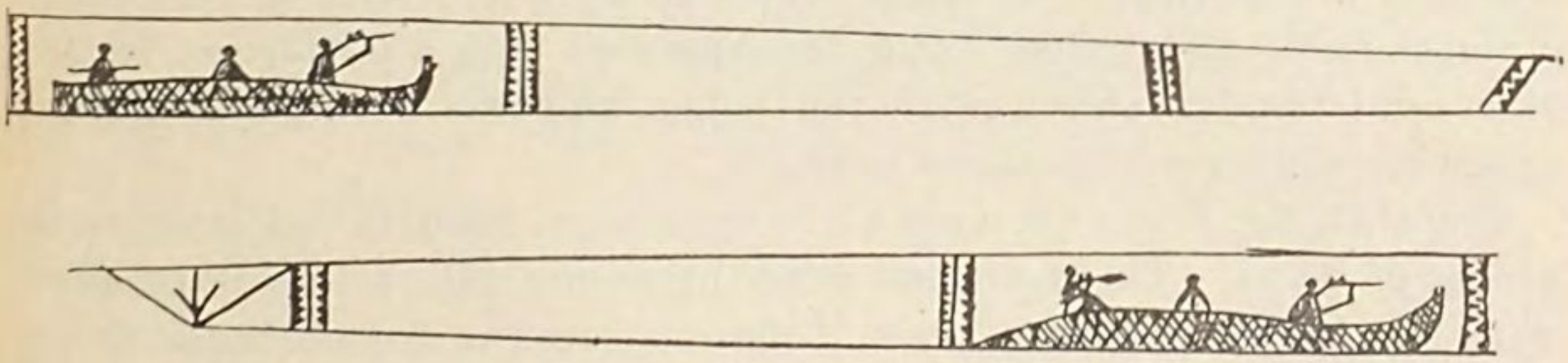


Fig. 34.

NATIVES ARMED WITH GUNS.

Fig. 34 represents but two of the five panels or spaces decorated, both of which bear figures referring to canoes in which the men at the rear are armed with oars, while those at the bow have guns raised as if about to shoot. The partitions consist of transverse ornamental lines, an improvement over the pairs or sets of vertical plain incisions shown on the paneled record in plate 36, fig. 2.

The serrated inner edges of the dividing lines, facing one another, resemble the conventional figures used to denote fish weirs, and appear in the present instance to have been used as ornaments. As before stated, the same pattern has been suggested, apparently, by the arrangement of the teeth of the seal, illustrations of which are of frequent occurrence in the collections of the National Museum.

In fig. 35 is the rude outline of an ivory harpoon head, on which the teeth of the seal are deeply incised, while in fig. 36 the pattern approaches more nearly the rude meander, between which and the true zigzag as made by the Eskimo there are constant gradations and blending of form.

The native in plate 40, bottom line, is following a herd of walrus. He is paddling with an ordinary one-bladed paddle, in front of which is the harpoon slightly elevated above the deck, and behind him is the

inflated seal-skin float, the rear end being bifurcated, showing the two flippers. Four cross-like characters denote flying birds.

The regularity and sameness of the figures seem to denote an attempt at ornamentation as well as a hunting record.

Plate 14, figs. 4, 5, 6, and 7, show specimens made of reindeer antler, and are from Norton Sound. The ornamentation is rude, and in all but one case consists of the representation of animals. In fig. 4 the design is of the "fish trap" pattern, with a median line and short alternate radiating incisions, the spaces being occupied by crosses, probably the simplest and rudest form of ornamentation excepting the simple straight line. At one end appears to be an indication of eyes and nostrils, but there is not sufficient marking to indicate whether this was intended for otter or seal.

Fig. 35.

SEAL HEAD, SHOWING TEETH.

The accompanying illustration, fig. 37, represents a tool the use of which is not known. "It has a point like a graver," says Mr. Murdoch, "and is made of reindeer antler, ornamented with a pattern of incised lines and bands, colored with red ocher, and was perhaps a marline spike for working with sinew cord."[1]

Plate 41, fig. 5, shows a small ivory wedge, used in splitting small pieces of wood. The specimen bears upon one side a nucleated circle with two lateral radiating lines, different from the conventional flower symbol, though resembling to some extent the circles and lines shown on plate 29, fig. 5. Along the upper edge are three parallel lines. From the outer ones, extending inward, are shown very short diagonal lines, being a rude imitation of some of the "fish trap" patterns.

A general view of the specimen, taking note of the short curve over the circle to denote an eyebrow, would suggest the head of a bird, the parallel lines along the lower left side very much resembling the mouth.

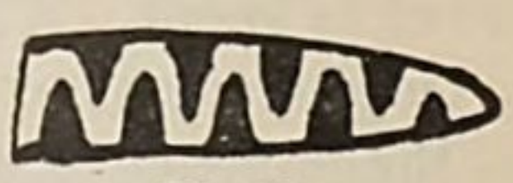


Fig. 36.

ARRANGEMENT OF INCISIONS TO DENOTE TEETH OF SEAL.

Plate 41, fig. 2, is a small ivory creaser used in decorating moccasins. Upon the sides are a series of parallel lines leaving three spaces, the central one consisting alternately of black and white squares, while the lateral spaces bear continuous rude meander or zigzag patterns. The latter are more neatly indicated by deeper incisions than usually found in ivory specimens.

Plate 41, fig. 3, represents a bone guard, such as is placed over the bow of a kaiak to protect it against floating ice. The chief ornamentation consists of three parallel lines extending along either side, within which is the rude meander pattern, while from the outer sides extends a sort of herring-bone pattern.

Plate 41, fig. 4, shows an ornament, broken at one end, which appears

[1] Ninth Annual Report of the Bureau of Ethnology for 1887–88, 1892, p. 294, fig 288.

EXPLANATION OF PLATE 41.

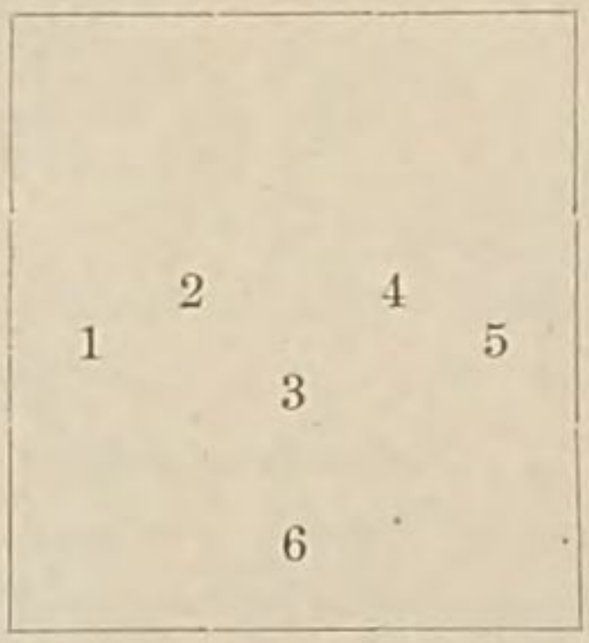


Fig. 1. WEDGE FOR SPLITTING WALRUS HIDE.
(Cat. No. 43739, U. S. N. M. Nunivak Island. Collected by E. W. Nelson.)

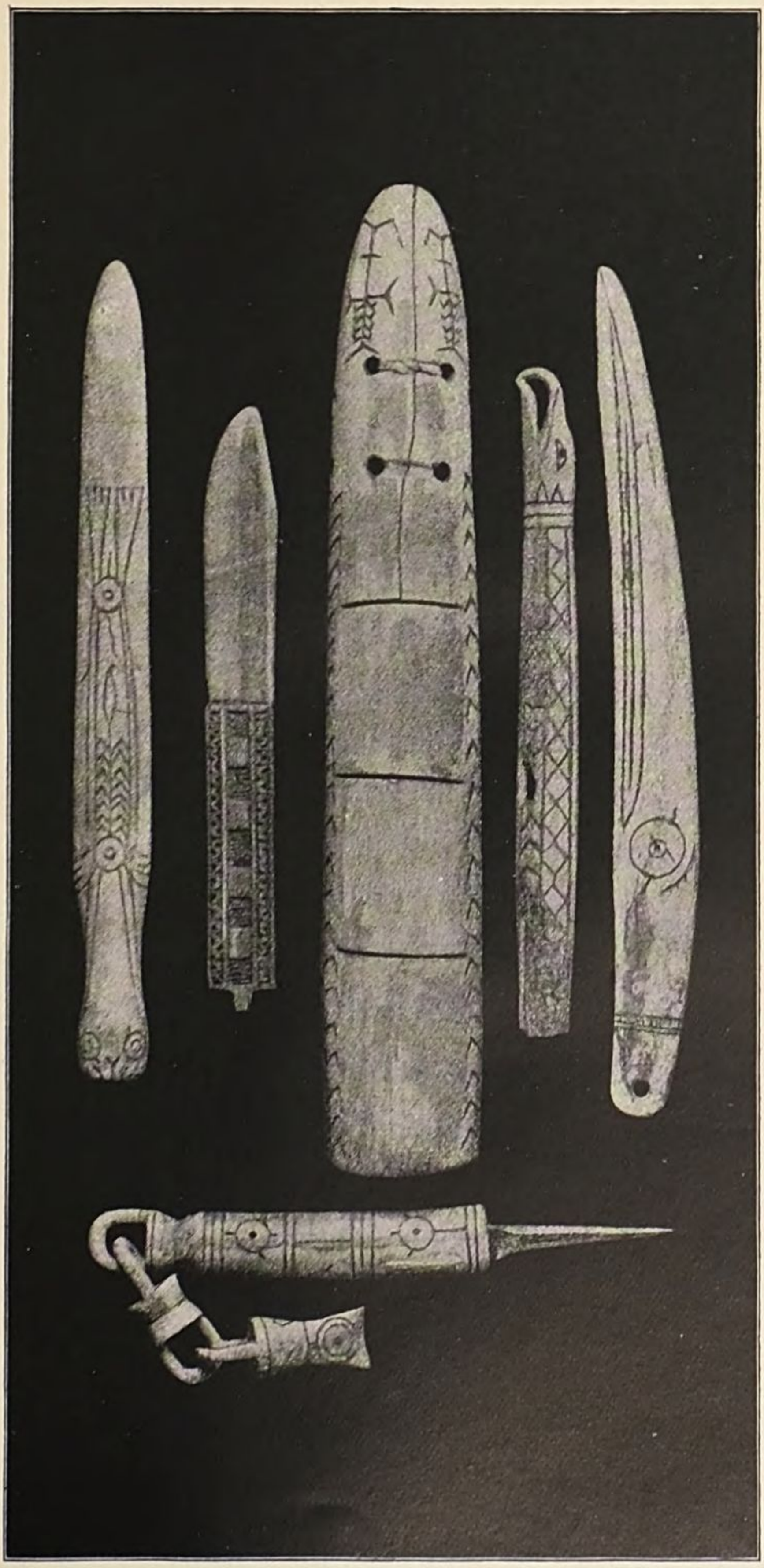
Fig. 2. CREASER.
(Cat. No. 45140, U. S. N. M. Sledge Island.)

Fig. 3. BONE GUARD FOR BOW OF BOAT.
(Cat. No. 33219, U. S. N. M. Collected by E. W. Nelson.)

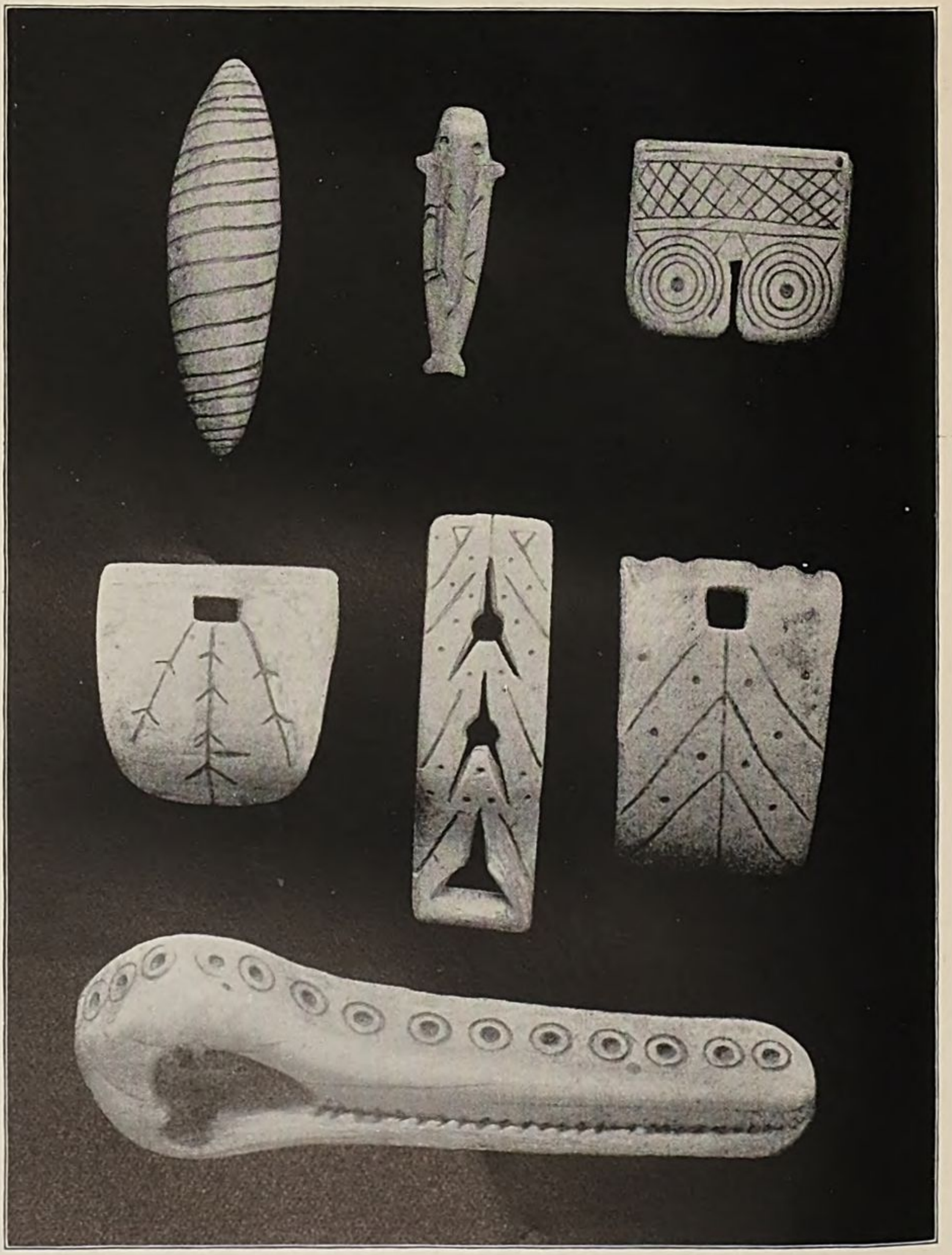
Fig. 4. ORNAMENT.
(Cat. No. 37431, U. S. N. M.)

Fig. 5. IVORY WEDGE FOR SPLITTING WOOD.
(Cat. No. 48289, U. S. N. M. Nunivak Island. Collected by E. W. Nelson.)

Fig. 6. BODKIN.
(Cat. No. 37752, U. S. N. M. Chalitmut. Collected by E. W. Nelson.)



ORNAMENTED UTENSILS.



ORNAMENTED UTENSILS.

EXPLANATION OF PLATE 42.

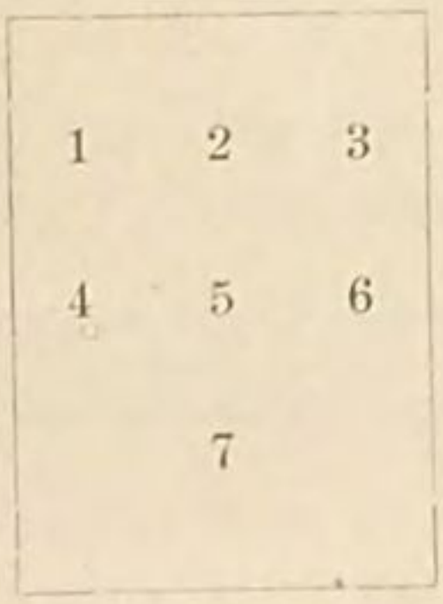


Fig. 1. Ear Pendant.
(Cat. No. 16199, U. S. N. M. Nunivak Island. Collected by E. W. Nelson.)

Fig. 2. Toy Fish.
(Cat. No. 43593, U. S. N. M. Cape Vancouver. Collected by E. W. Nelson.)

Fig. 3. Hair Ornament.
(Cat. No. 37003, U. S. N. M. Kushunuk. Collected by E. W. Nelson.)

Fig. 4. Spear Guard for Boat.
(Cat. No. 37759, U. S. N. M. Chalitmut. Collected by E. W. Nelson.)

Fig. 5. House Hook, for Hanging up Utensils.
(Cat. No. 73034, U. S. N. M. Collected by C. L. McKay.)

Fig. 6. Spear Guard for Boat.
(Cat. No. 37461, U. S. N. M. Anogogumut. Collected by E. W. Nelson.)

Fig. 7. Arrow Straightener.
(Cat. No. 127893, U. S. N. M. Kowak or Putnam River, Alaska. Collected by Lieut. G. M. Stoney, U. S. N.)

to have served as a handle, as a small perforation in the middle seems to have been made for the purpose of inserting a cord. The upper side or half of this ornament is decorated with zigzag cross lines, while the lower has the herring-bone pattern, like the ornaments upon one side of the running figure in the preceding illustration, plate 41, fig. 3.

Plate 41, fig. 6, represents a bodkin, and is elsewhere referred to with respect to ornamentation.

DECORATION CONSISTING CHIEFLY OF CIRCLES.

The several objects represented on plate 42 are variously ornamented in simple patterns. Fig. 1 is an ivory ear pendant, which is creased spirally from end to end by one continuous line. Fig. 2 represents a toy fish, upon which is incised the figure of a wolf, with another linear character somewhat resembling a crude representation of the same species.

The hair ornament shown in fig. 3 on the same plate is decorated along the upper half by two pairs of transverse parallel lines, between

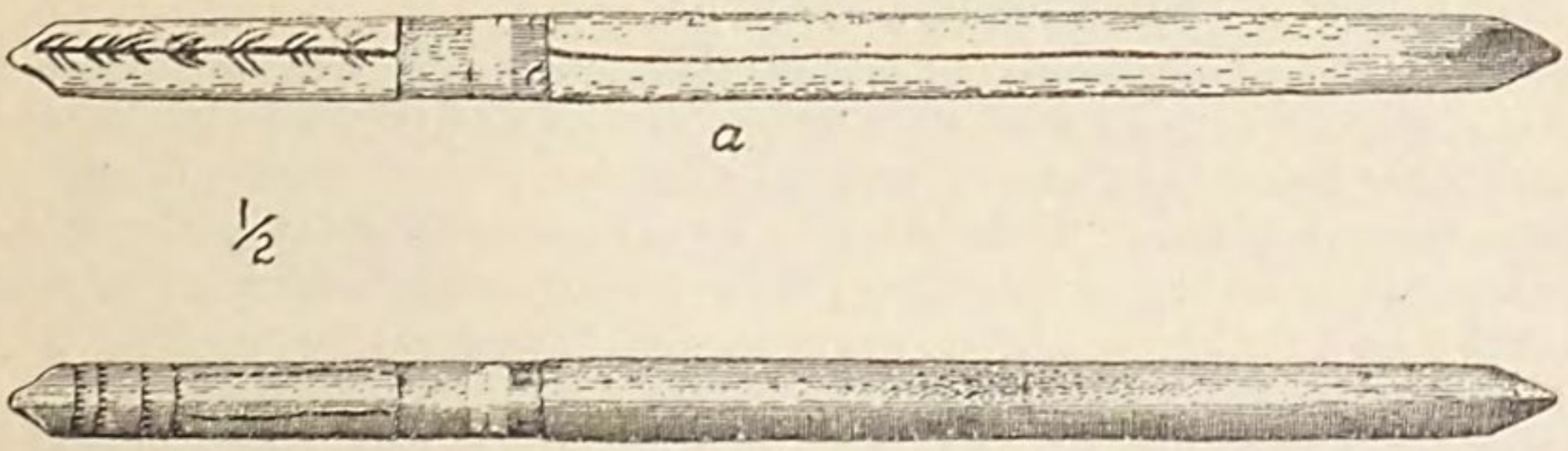


Fig. 37.

TOOTH OF ANTLER. POINT BARROW.

which are cross lines to resemble the common portraiture of a suspended seine net, as shown on plate 59, also in fig. 79 on page 865.

The spear guard shown in plate 42, fig. 4, bears a simple vertical line from which diverge, downward and on either side, three lines, between which are small punctures. This enlarged figure suggests a like origin as the ornamented line in the middle of fig. 6, the latter having for its conception, no doubt, the plant symbol mentioned and figured elsewhere, particularly in connection with plate 77, and in fig. 70, page 863. Compare also with fig. 11, on plate 77, and other types of circles represented thereon, which occur upon various types of Eskimo utensils and ornaments.

Plate 42, fig. 5, is a common hook made for use in suspending various household articles.

In addition to the lateral diverging lines, the central one is absent, but in its stead a continuation of perforations from which radiate three incisions, made by means of a narrow saw or a sharp-edged file. These incisions serve instead of the narrow or shallow creases noted on figs. 4 and 5. Punctured spots are also added to serve as additional ornaments.

The lower figure on plate 42, fig. 7, is an arrow straightener, made of ivory. The lower longitudinal line has similar, though more frequently recurring, lateral lines than on fig. 6, while the side bears a continuous row of nucleated circles, the central cup-like perforations being unusually large in comparison to the rings surrounding them, clearly indicating that a one-eighth-inch auger bit was used in their production, as a smaller instrument made specially for incising rings (as the V-shaped cuts in the end of a piece of metal) would naturally have the two points equally pointed. (Compare plate 77.)

The reverse of the side bearing the median line bears a similar incision from end to end, but the lateral, oblique, radiating lines are each between one-eighth and one-half inch in length, somewhat between the two sizes noted on plate 8. This is evidently without significance other than that of ornamentation.

In a private communication of recent date Mr. L. M. Turner informs me, with reference to the circle, that "this ornament is much more common south of Bering Strait, where it is a conventionalized representation of a flower." Mr. Murdoch[1] writes:

> Some of the older implements in our collection, ornamented with this figure, may have been obtained by trade from the southern natives, but the Point Barrow people certainly know how to make it, as there are a number of newly made articles in the collection thus ornamented. Unfortunately, we saw none of these objects in the process of manufacture, as they were made by the natives during odd moments of leisure, and at the time I did not realize the importance of finding out the process. No tool by which these figures could be made so accurately was ever offered for sale.
>
> Neither Mr. Turner nor Mr. Dall, both of whom, as is well known, spent long periods among the natives of the Yukon region, ever observed the process of making this ornament. The latter, however, suggests that it is perhaps done with an improvised centerbit, made by sticking two iron points close together in the end of the handle. * * * Lines rarely represent any natural objects, but generally form rather elegant conventional patterns, most commonly double or single borders, often joined by oblique cross lines or fringed with short, pointed parallel lines. * * * While weapons are decorated only with conventional patterns, other implements of bone or ivory, especially those pertaining to the chase, like the seal drags, etc., are frequently carved into the shape of animals, as well as being ornamented with conventional patterns.

Mr. L. M. Turner says, furthermore:

> The circles which have smaller ones within represent the so-called "kantag" (a word of Siberian origin introduced by the Russians), or wooden vessels, manufactured by Indians and bartered with the Innuit for oil and sealskin bootsoles, etc. These "kantags" are sometimes traded in nests, i.e., various sizes, one within the other. (See figs. 4, 7, and 10, on plate 77.)

Regarding the "circle figures," Mr. Turner[2] remarks further:

> I know from information given by one of the best workers of bone and ivory, also pipe-bowls, in the Unaligmut (or Unalit) village, near St. Michaels, that the circle means a flower when it has dentations on the outer periphery, and some that were unfinished on an old much used handle for a kantag (wooden vessel) were also said by him to mean flowers.

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[1] Ninth Annual Report of the Bureau of Ethnology for 1887–88, 1892, pp. 390, 391.

[2] Letter dated February 25, 1895.

ORNAMENTED CARVINGS. AFRICA AND ALASKA.

EXPLANATION OF PLATE 43.

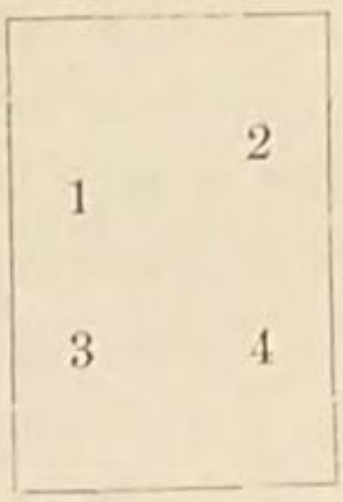

Fig. 1. FETISH MADE OF HIPPOPOTAMUS TOOTH.
(Cat. No. 174704, U. S. N. M. Lukuga River, Kongo. Collected by Dorsey Mohun.)

Fig. 2. HAIR-DRESSING PIN.
(Cat. No. 174737, U. S. N. M. Lukuga River, Kongo. Collected by Dorsey Mohun.)

Fig. 3. HAIR-DRESSING PIN.
(Cat. No. 174736, U. S. N. M. Lukuli River, Kongo. Collected by Dorsey Mohun.)

Fig. 4. SEAL DRAG HANDLE. Effigy of the animal.
(Cat. No. 33618, U. S. N. M. St. Michaels, Alaska.)

Those circles also represent the arms; just why I do not know. The spots over a dog's eyelid, usually brown in color in the dog, are also called Tuq, and a dog thus marked is called Tuqoliq. The word refers to the dark colored portion of that region and has nothing to do with the orifice, but when the circle is made thus ⊙, then it refers to the hole [spot] and the surrounding part.

I have elsewhere shown how the circle, or rather the spiral, may be drawn to denote mobility, as in the shoulder joint of the figure of a grasshopper to denote the Nahuatl symbol for Chapultepec.[1] The circle is also used on various figures of seals, and apparently denotes the shoulder joint, as shown in harpoon head in the collection of the Museum (No. 43750). Further illustration of the conventional use of circles is given under the caption of Conventionalizing, with plate 75.

The employment of an iron or steel bit, evidence of which appears to have been one about three-sixteenths of an inch in diameter, is shown upon a neatly-carved seal obtained in St. Michael's, here represented as the lower right-hand figure on plate 43, fig. 4. The specimen was used as a seal drag, two perforations beneath the reach communicating with a larger one at the lower part of the abdomen, through which the necessary cord was passed. These bit marks are in the form of decorative circles, the central holes being in each filled with a wooden peg, the eyes, though smaller, also being plugged with hard wood.

Plate 37, fig. 4, represents a specimen of bag handle or drill bow from Point Barrow, showing a number of nucleated rings, only one nucleus being without the second outer ring, indicating that these circles are made with different instruments.

Similar nucleated circles appear upon specimens from an entirely remote locality. In fig. 1 of the remaining specimens upon plate 43 we have a fetish made of hippopotamus tooth, secured by Mr. Dorsey Mohun on the Lukuga River, in the Kongo State, Africa. The nuclei are probably one-eighth of an inch in depth, while the circle surrounding each one-fourth inch in diameter. The groove clearly indicates the use of a metal tool in every respect resembling the circles and respective central pits upon the ornamented drill bow shown in fig. 4 on plate 37.

The specimen referred to is an imitation of the human form, the head slightly bowed forward, the arms close to the body, with the hands reaching toward each other before the body. The body is represented as cut off a little below the umbilicus, and is scooped out below as if intended to be placed upon a rod.

Another specimen, fig. 2, represents a hair dressing pin, from the same locality, $2\frac{3}{4}$ inches long, with a sharp point below, while the almost flat top or head is ornamented with five similar nucleated circles, each three-sixteenths of an inch in diameter.

The remaining specimen, fig. 3, from the Lukuga River, Kongo State, Africa, is a slightly concave disk, bearing five series of concentric

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[1] "Beginnings of Writing." Appleton & Co., N. Y., 1895. p. 90, fig. 49.

circles, the central perforation in the middle passing entirely through the piece of ivory, which at that point is three-fourths of an inch thick. The circles were also made with a metal tool, more likely of native manufacture, out of a piece of foreign iron or steel, the end of which was filed ∧-shaped, as mentioned in connection with the instruments of the Eskimo.

These African specimens, two made of hippopotamus teeth and one of ivory, are similar in texture to the materials employed by the Eskimo, and the process adopted practically the same because of such texture.

These illustrations are here introduced not with the object of tracing the migration or transmission of a given pattern, but because of the interest naturally excited by the independent discovery of a process of workmanship found to have developed in such widely remote localities.

In northern Africa the same form of circle, nucleated and as concentric rings, is very much employed for decorative purposes. What the original signification may have been it is now, perhaps, impossible to determine, and it may be that in the two localities to be referred to below the designs were brought from Europe, and probably originally from the Ottoman Empire.

On plate 44 is shown a leather, brass mounted knife sheath, at the upper end of which is a tolerably fair attempt at a figure consisting of concentric rings, while beneath it a series of rectangular figures within one another. The designs are produced by pressure from the under side, the patterns having been made before the piece of sheet metal was placed about the sheath. This example is from Tangier, in Morocco.

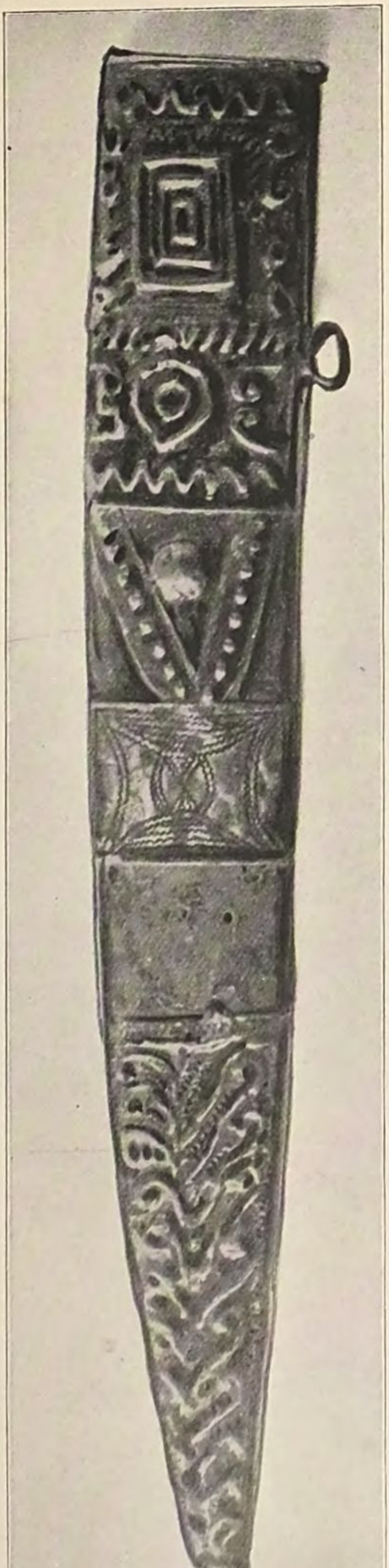
From an antique subterranean chapel at Carthage was obtained, about fifteen years since, a collection of Christian lamps and other evidences of the secret profession of the then new faith, among the ornamentation upon some of which relics are many symbols of Christianity and of monograms of the name of Jesus Christ, but the most interesting in the present connection is the recurrence of the very widespread figure of concentric rings, as also of squares or rectangular figures within one another, as will be observed upon the illustration of the Roman lamp in plate 45.

This illustration is reproduced from an article by A. Delathe on Carthage l'antique chapelle Souterraine de la Colline de Saint-Louis.[1]

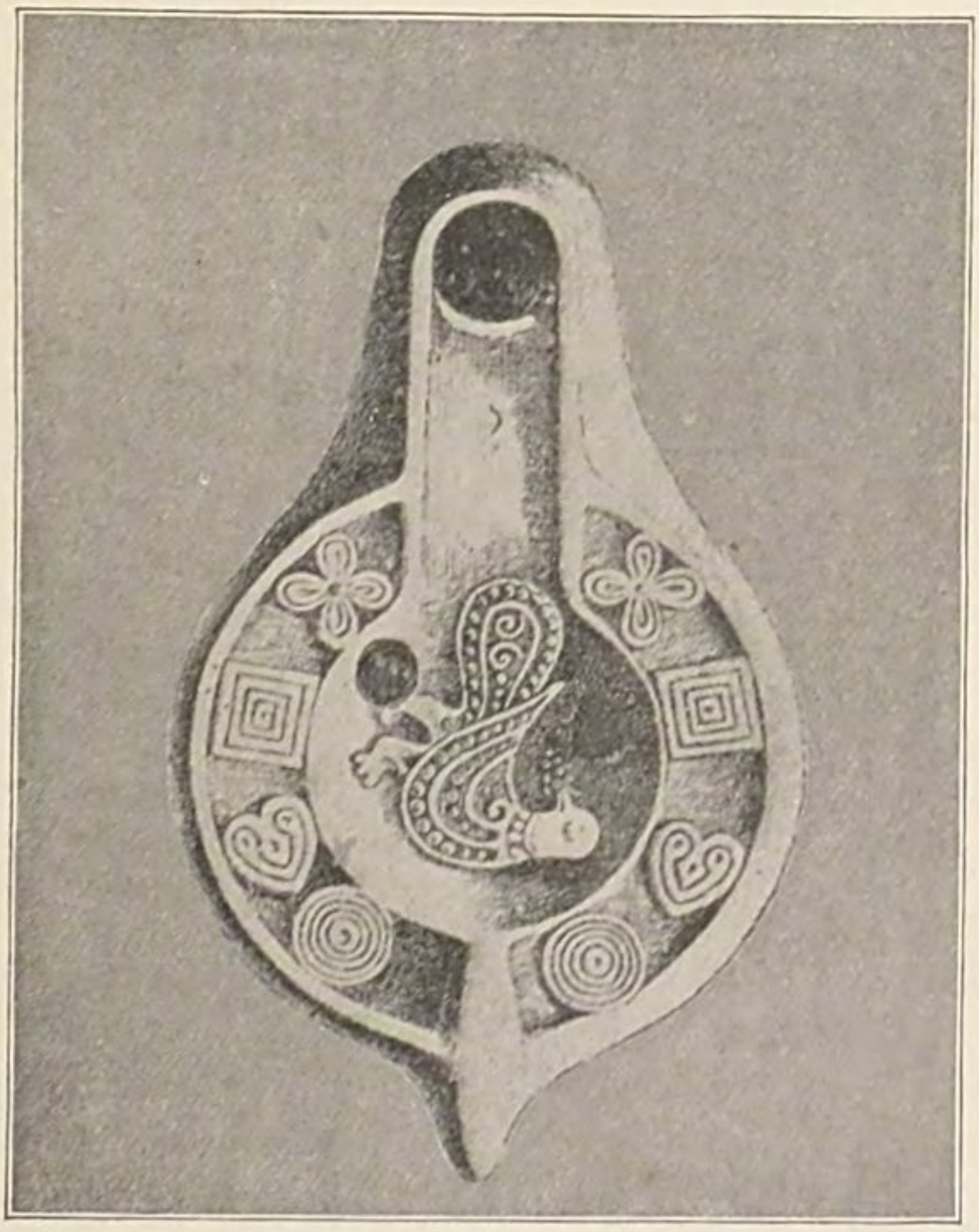
Upon another lamp of the same general form, from the same locality, is a cross pattée, the arms of which are severed with nucleated and concentric rings, exactly like many of those upon Alaskan objects.

The larger rings and square figures upon the lamp shown in plate 45 resemble those upon the brass-ornamented Moorish knife sheath from Tangier, Morocco (plate 44), where it was secured by Lieutenant A. P. Niblack, U. S. N. The chief interest lies in the two designs near the

[1] Cosmos, Revue de Sciences et de leurs applications, Paris, Nouvelle Sér, 582, 1896 (March 21), p. 495.



KNIFE SHEATH. TANGIERS, MOROCCO.



ROMAN LAMP. CARTHAGE.

top—one a figure of rectangles within one another, and the other a figure of rude rings surrounding one another.

It is strange that these two designs should be suggested upon the Roman lamp from Carthage, the latter of an early Christian period, and from the same quarter of Africa. It is probable that both designs may have their origin in the peculiar Oriental patterns so freely employed in Mohammedan countries, in some of which they even antedate the birth of Mohammed. The occurrence of like designs in Turkestan is also mentioned, and their apparent absence in Hindustan, as illustrated by the collections in the National Museum, is rather remarkable.

The delicate zigzag lines on the middle band of the sheath are apparently made in the same manner as like patterns on Polynesian weapons and ornaments, by pressing forward upon the tool, and at the same time rocking it from side to side, the lateral incised points being made as the lateral cutting edge is depressed, and again liberated when turning the tool toward the opposite side to make a similar mark. The work is performed rapidly, and may be crudely though similarly imitated by means of a very narrow chisel and a piece of hard wood.

The recent discoveries in Egypt by Mr. Flinders-Petrie are of so high an interest to archæology generally, that a brief reference thereto may be of interest, especially so because some of the pottery is decorated not only with figures of animals and birds, but a common decorative motive which represents "a long boat with two cabins, an ensign pole, and many oars; sometimes the figure of a man is added." A red ware, said to have been imported from the Mediterranean region, bears decorations of "dents de loup," flowers, and plants.

Of great interest is the discovery of vessels bearing numerous figures of concentric circles, vases of ruder type than the lathe-made ceramics of the Egyptians, and recognized to be the workmanship of a foreign people.

These intruders, the evidences of whose general culture, beliefs, and funeral customs show them to have been strangers in the Nile Valley. Not a single detail of their culture did they hold in common with the Egyptians. Moreover, their number, which was found to have spread over a considerable portion of upper Egypt, from Abydos to Gebelen, over one hundred miles, whilst their influence was observable from Tenneh to Hieraconpolis, i. e., over three hundred and fifty miles, and absolute control of the region which they assumed and which is shown by the total absence of any object recalling Egyptian civilization, show them not only to have been invaders, but invaders who once had swept over the region and who, settling down, had lived there for a considerable period, borrowing little or nothing of the people whose land they occupied.[1]

In connection with the report made by Mrs. Cornelius Stevenson, whose words I have quoted, Doctor D. G. Brinton remarks that these

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[1] Proceedings of the American Philosophical Society, Philadelphia, Pa., XXXV 1896. p. 57, Plate IV.

intruders were probably Libyans—that is, Berbers—the ethnography of which stock has been a special study with him. Doctor Brinton remarks: "This identification, I believe, will finally be established. If we examine the configuration of the Nile Valley and its surroundings, no other theory is tenable, providing the Libyan stock extended that far south of the Mediterranean at a date 3000 B. C. We know they did, and much earlier, from their very early presence in east Africa." It appears to be conclusively shown by Doctor Brinton's further arguments that the "new race" was of the Libyan stock.

The origin of the concentric circles and other incised ornamentation as decorative motives on this pottery would seem to have come from the Mediterranean, perhaps north of it, where a near approach is found in later Neolithic stations in Italy, Spain, and in the lower strata of Hasserlik. Could there have been a prehistoric common center of development of this very common ornament in northwestern Europe, from which it was carried into Scandinavia, and the valleys of certain portions of France, where its occurrence is so frequently remarked in bronze and other articles of personal adornment?

It has been shown that trade routes existed in prehistoric times between Italy and the Scandinavian Peninsula and Denmark, the scattered graves en route producing amber for one side and ornaments of south European manufacture on the other. Similar trade routes, which were also culture routes, have also been suggested as having existed between Scandinavia across northern Europe and Asia down into India. Why could not like routes have been followed in prehistoric times along the lines of the localities producing so much jewelry and fictile ware chiefly ornamented with spirals and concentric rings?

That trade routes existed between the countries of the Mediterranean, even as far east as Macedonia, has been well established, and the following remarks are of interest in this connection:

In the June number of "The Strand Magazine"[1] appeared an illustrated article devoted to finds of coins in Great Britain, one illustration in particular attracting my attention because of the presence upon the reverse of a nucleated ring, which character in this connection appears to have no apparent relation with the other objects represented upon the coin and with which it is associated.

Upon reference to the various works on the coinage of the ancient Britons, several curious, interesting, and apparently new facts present themselves—facts which may with propriety be here referred to. The subject seems to me to be closely related to that under consideration in so far as it relates to trade or culture routes, and the adoption of characters by a people with whose signification or import they may be unacquainted, and the ultimate replacement of such characters which may be of importance in and a necessary part of the prototype, by the sub-

[1] London, 1896.

stitution of their own characters or symbols, through which change the signification of the legend upon the prototype is lost, and would no longer be recognized by the authors thereof.

I have already referred to the coinage of the Britons, as treated in the admirable work of Doctor John Evans,[1] to which the reader is referred for full details and ample illustrations in support of the suggestions ventured below.

I have had occasion to refer to British coins bearing the figure of the horse, with additional legs to denote that more than one such animal was intended. Such practice of representing a part for the whole, or vice versa, was referred to as synecdoche, and as being common to the pictographic records of the North American Indians.

On plate 43, fig. 3, is the representation of an uninscribed British gold coin, upon the reverse of which appears the outline of a horse, each leg divided into two, so as to resemble—in fact, give—eight legs, and suggesting the two horses noticeable upon the obverse of the typical prototype, as shown in fig. 1 on the same plate. Now, looking at the legs of the horse on the reverse of fig. 2, there will be seen the same number of legs, with the exception that the engraver of this piece has united each pair at the fetlocks, so as to terminate in one hoof, instead of two hoofs, as in some other examples.

In the specimens of the same series of coins the successive copying of designs has resulted in solid legs instead of by pairs, thus returning to a pattern on which but a single animal is portrayed.

But to return from this digression. It is necessary to show how the original patterns came to be employed by the designers for the British coins. It has been pretty clearly proven by Doctor John Evans, Mr. Hawkins, and others, that the ancient Britons were possessed of money long before the time of Cæsar's visit. The distinct mention of money

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[1] "The Coins of the Ancient Britons." London: 1864–1890.

See also Adamson's Account of the discovery at Hexham, in Northumberland, of Anglo-Saxon coins called Stycas. Royal Society of Antiquarians of London [1834?]. Illustrations of 941 coins.

Doctor Stukeley's "Twenty-three plates of the Coins of the Ancient British Kings," London. [1765.]

Doctor Evans remarks that "the coins themselves are most inaccurately drawn," yet they are interesting as showing a certain degree of evolution and alteration of characters which the engravers copied or attempted to copy from the prototypes.

Nummorum Antiquorum Scriniis Bodleianis Riconditorum Catalogus cum commentario tabulis æneis et appendice. [Oxonii ?] A. D. 1750. Plates.

Nummi Britannici, of interest in present connection, are shown on Plate XVI.

Annals of the Coinage of Britain, by the Rev. Rogers Ruding, B. D. 4 vols. London, 1819. Plates and map.

The Silver Coins of England, by Edward Hawkins, F. R. S., etc. London, 1887. 8°. Plates and map. Gives illustrations of British coins similar to other derivatives of the Macedonian Phillipus.

Celtic Inscriptions on Gaulish and British Coins. Beale Poste. London, 1861. Plates I–XI.

occurs in various classic writings of the time of Cæsar, and yearly tribute is noted by Dion Cassius, Eutropius, Diodorus, Strabo, and others.

Doctor Evans remarks:

> It may indeed be urged that these writers are all of them later than Cæsar; but it is to be observed that the information upon which some of them wrote was derived from earlier sources, and that not one of them treats the presence of gold and silver in this country as of recent date, or appears to have had the remotest conception that in the time of Julius Cæsar it was destitute of them.[1]

Commerce between the Gauls and Britons existed long anterior to the period of the Roman invasion, and a native coinage existed also among the Gauls. The intercourse of the Phœnicians and Britons was also of an early date, and the founding of the Greek colony of Massilia (Marseilles)—usually placed at about B. C. 600—also aided in civilizing that part of Gaul, where the neighboring Gauls no doubt first learned of the usages of civilized life, the effect of such acquirements gradually extending toward the channel settlements, and finally across and among the British tribes. From this center of civilization, says Doctor Evans, the Gauls became acquainted with the art of coining.

> The early silver coins of Massilia (and none in gold are known) were occasionally imitated in the surrounding country; but when, about the year B. C. 365, the gold mines of Crenides (or Philippi) were acquired by Philip II of Macedon, and worked so as to produce about £250,000 worth of gold per annum, the general currency of gold coins, which had before been of very limited extent, became much more extensive, and the stater of Philip—the regale numisme of Horace—became everywhere diffused, and seems at once to have been seized on by the barbarians who came in contact with Greek civilization as an object of imitation. In Gaul this was especially the case, and the whole of the gold coinage of that country may be said to consist of imitation, more or less rude and degenerate, of the Macedonian Philippus.[2]

Doctor Evans further remarks:

> Another reason for the adoption of the Philippus as the model for imitation in the Gaulish coinage has been found in the probability that when Brennus plundered Greece, B. C. 279, he carried away a great treasure of these coins, which thus became the gold currency of Gaul. This would, however, have had more effect in Pannonia, from whence the army of Brennus came, than in the more western Gaul.

On plate 46, fig. 1, is reproduced a type of the Philippus, the laureate head upon the obverse representing Apollo (or, according to some, of young Hercules), while on the reverse is shown a charioteer in a biga, with the name of Philip below a horizontal line in the exergue.

The biga on these coins of Philippus II refers to the victories of Philip at Olympia. The resemblance to Apollo may have been suggested by some relation to that identification of Hercules and the sun which prevailed in Asia at a later time, and possibly as early as that of

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[1] "The Coins of the Ancient Britons." London: 1864–1890, p. 20.

[2] Idem., p. 24.

EXPLANATION OF PLATE 46.

Fig. 1. Stater of Philip II. of Macedon.

Fig. 2. Uninscribed gold coin of ancient Britons, believed to have been designed after stater of Philip. Gold; weight, 111 grains.

Fig. 3. Resembles preceding, though bust and horse face toward left. Weight, 114 grains.

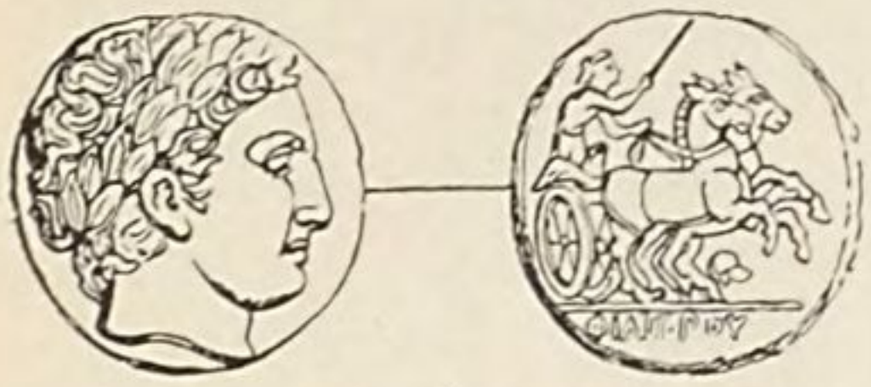
Fig. 4. Also uninscribed and of gold. The fillet is of leaves turned upward; the horse is disjointed, and greater departure from the prototype is apparent.

Fig. 5. Another gold imitation of the stater, but still greater dissimilarity is apparent on the reverse.

Fig. 6. Five small dots are introduced in the face, so as to cover the space between the eyes and hair. Beneath the horse, the helmet, visible in the stater, has become a circle surrounded by small dots.

Fig. 7. The departure from the prototype is still more interesting in this specimen—a nucleated circle, a plain circle, and a pellet appearing beneath the horse in place of the helmet. Doctor Evans, from whom these references were obtained, remarks that this specimen shows "a curious instance of extreme degradation from the type of the Phillipus on the reverse."

Fig. 8. The headdress resembles a cruciform ornament, with two open crescents placed back to back in the center. The reverse bears the horse, with both a circle and a wheel-shaped ornament in lieu of the helmet.



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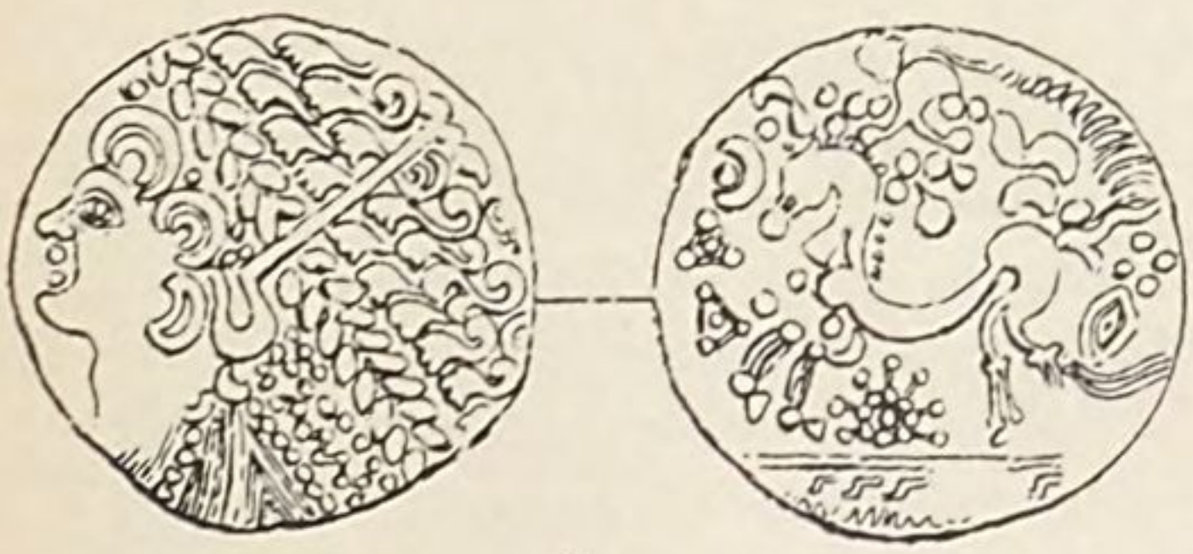

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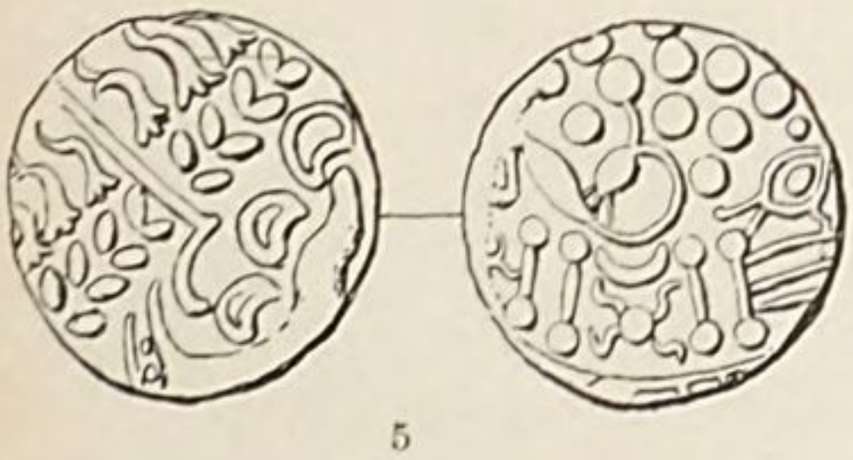

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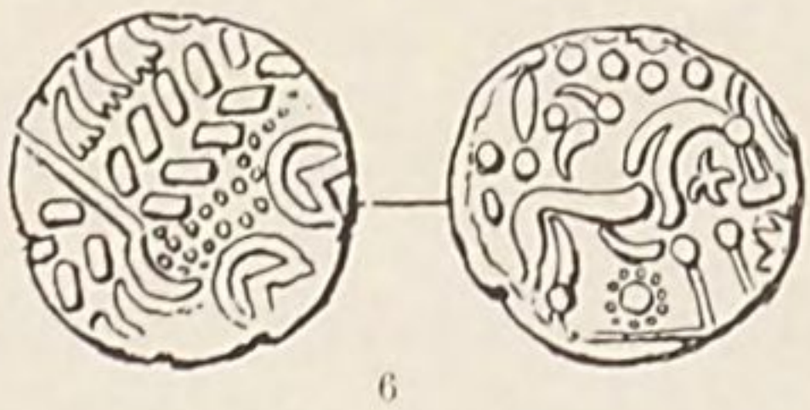

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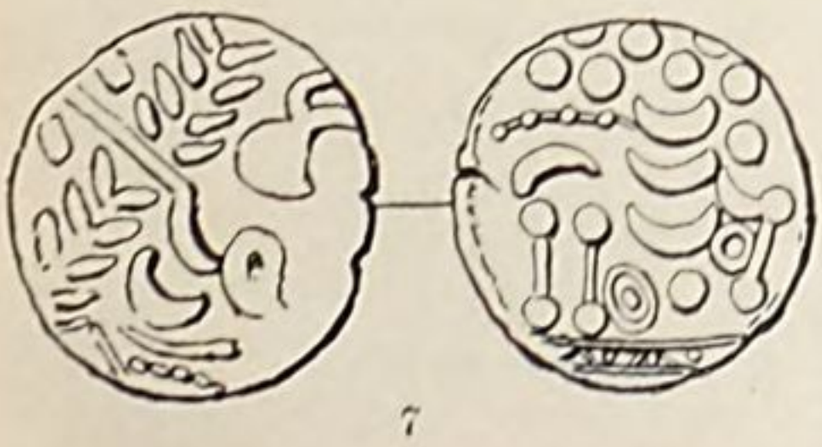

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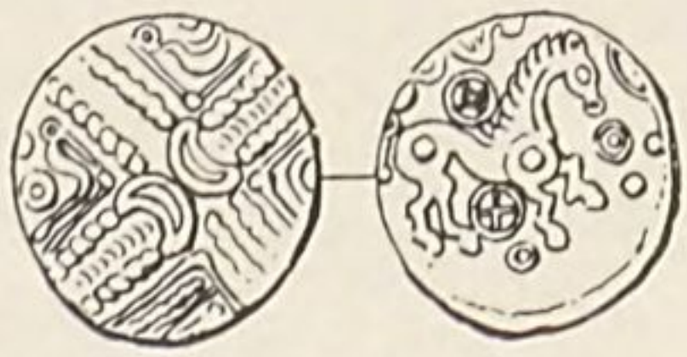

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BRITISH IMITATIONS OF MACEDONIAN STATER.

Philip II.[1] Between the horses and base line is the figure of a helmet, suggesting the head gear of the slain over which the victor is driving. On some specimens the helmet is replaced by the fulmen, a △, or the Greek *Γ*.

Because of the limited space, the wheel of the chariot is rather oval, suggesting perspective on the engraving, though on later imitations this can not be claimed for the elliptical form of the wheel or the character substituted therefor. "The earliest of the Gaulish imitations," says Doctor Evans,[2] "follow the prototype pretty closely, but eventually both the head and the biga become completely transformed."

The earliest British coins showing such imitation of the Philippus are believed to be of the period of 150–200 B. C., although the death of Philip II took place B. C. 336, so that his coins began to be imitated in Gaul about B. C. 300.

The author whom I have above quoted says also that coins reduce in weight for the sake of the small gain of the governing power; and coincident with such reduction in weight, and perhaps size, there is a remarkable change in types, in each successive imitation, thus departing more and more from the original prototype. "The reduction of a complicated and artistic design into a symmetrical figure of easy execution was the object of each successive engraver of the dies for these coins, though probably they were themselves unaware of any undue saving of trouble on their part or of the results which ensued from it."[3]

By reference to the illustrations as figs. 4 and 5, and plate 47, figs. 3 and 8, examples selected from many diverse forms, there will be observed a most remarkable deviation in engraving from the original type. The wreath and hair become so strangely altered as to be scarcely recognizable, a few geometric or other simple figures serving in place of the leaves and locks. These finally result in a cross-like figure, as in plate 47, figs. 1 and 2, while in some still other imitations the head is represented by an ear of grain, like wheat or rye (designated by Doctor Evans as corn).

The most interesting changes occur, however, upon the reverse of the imitations, and it is to these changes that I wish to make special reference.

As stated, the typical Philippus bears beneath the horses a helmet, as shown upon the illustration in plate 46, fig. 1. This article of head gear may or may not have been known to the Gauls, and if it were, it is more than probable that the Britons were unfamiliar with it, being more remote from the peoples by whom such defensive armor was used, so that even if the helmet was represented upon Gaulish imitations, the British engraver seems to have ignored the exact form and

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[1] Eckhel. Quoted at second hand from Numismata Hellenica, by William Martin Leake. London, 1886, in footnote.

[2] "The Coins of the Ancient Britons." London, 1864–1890, p. 24.

[3] Idem., p. 28.

to have made what he thought may have been intended, or perhaps even ventured to introduce a British symbolic figure, the signification of which he did comprehend.

It is probable, also, that, in the absence of good tools for engraving metals, some of the simpler designs were made by using a pointed punch or like tool, and punching the patterns or parts of patterns desired. The pellet, surrounded by a ring of pellets, was equivalent to a ring with its nucleus, as in plate 46, fig. 8. The figure also presents itself as a circle with four small pellets arranged in the form of a cross, and plate 46, figs. 2 and 6, and finally in the semblance of a wheel with six, seven, or eight spokes, illustrations of which are given in plate 46, figs. 7 and 8, and plate 47, figs. 1, 2, and 8. Leaving off the circle suggested a cross, as in the former, and a star, as in plate 47, fig. 3, both without doubt Druidical symbols, as was also the nucleated ring, of all of which numerous examples occur. This cross or star form ultimately gave rise to imitations of crab-like objects, which in turn were interpreted to denote figures resembling the hand. Such gradual though persistent imitation resulted in some remarkably dissimilar patterns, as may be noted by comparing the typical Philippus in plate 46, fig. 1, with the illustration, plate 46, figs. 5 and 6, while beneath the figure of a disjointed horse on plate 47, fig. 3, the star survives; while the head upon the obverse retains but a few rectangular marks to denote leaves, while the right-hand upper figure signifies the eye, and the lower broken circle, bearing a <-shaped attachment, the mouth.

The △, which has been referred to as a variant, and rarely occurring beneath the body of the horse, has been reproduced as a triangle, the angles of which consist of nucleated circles connected by short lines. This symbol is also an astronomical character, and is of frequent occurrence on various petroglyphs located in that area of country formerly occupied by the several tribes of Indians composing the Shoshonian linguistic family.

Again, the same object figures extensively in the mnemonic records of the Ojibwa Indians, especially those records relating to the shamanistic ritual of the Midē′wiwin, or Grand Medicine Society, elsewhere described in detail.[1] Another symbol found in lieu of the triangle, though without doubt a variant of it, resembles an Ojibwa symbol to denote "the mystic power of looking into the earth and there discovering sacred objects." It consists of three rings, or perhaps even nucleated rings, placed in the form of a triangle, a wavy line extending around the upper circle and downward to either side toward the lower ones, denoting "lines of vision." What the signification of the character upon the coins may have been it is impossible to imagine, unless it were merely a variant of the △, which in turn may have been a conventionalized form of the helmet, as shown in the typical Philippus on

[1] See the writer's exposition of this ritual in the Seventh Annual Report of the Bureau of Ethnology for 1885–86, 1891, p. 143.

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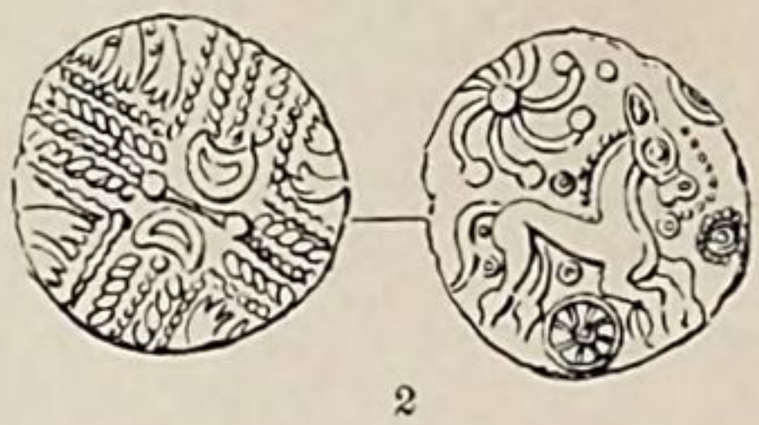

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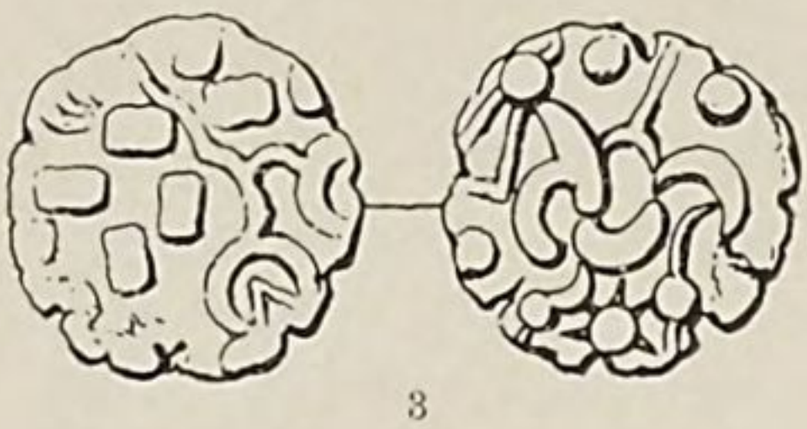

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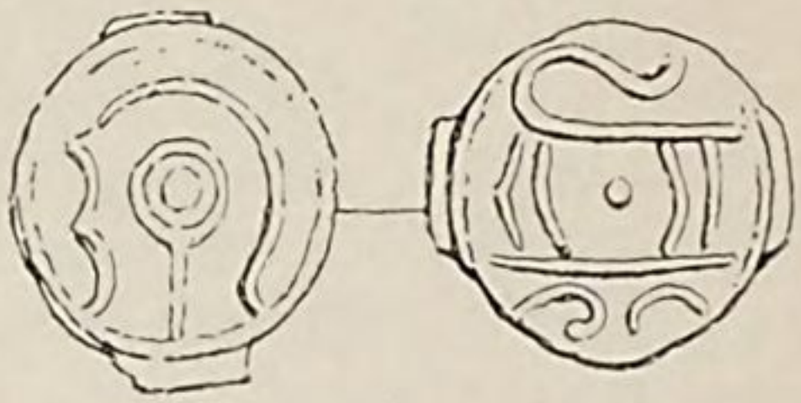

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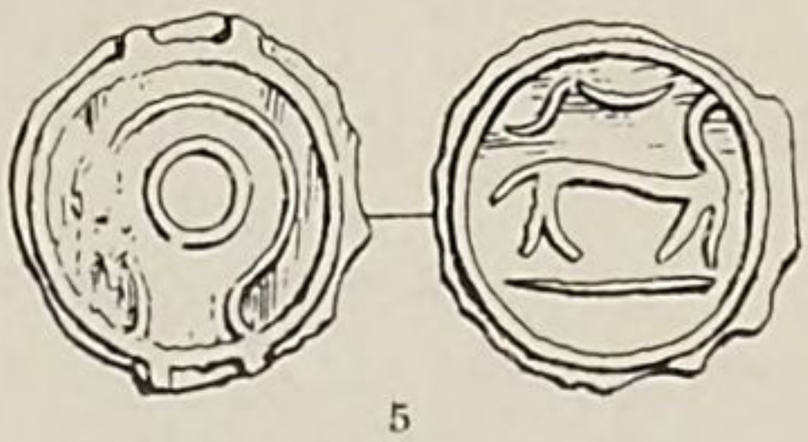

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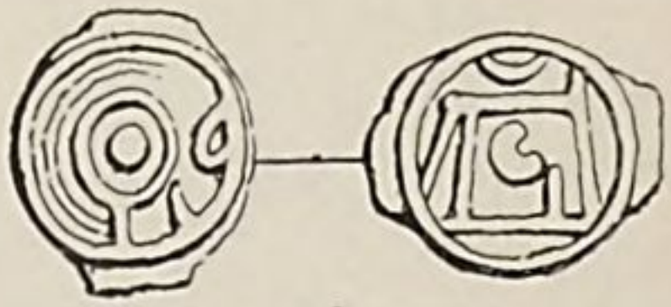

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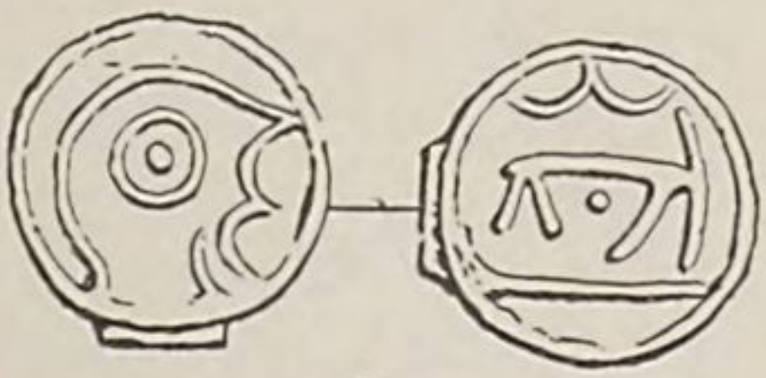

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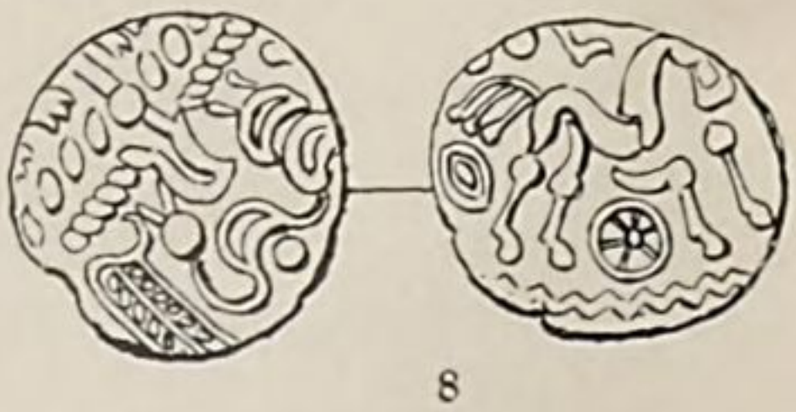

8

COINS OF BRITONS AND GAULS.

EXPLANATION OF PLATE 47.

Fig. 1. The head ornament on this piece becomes more cross-like than in the preceding, while upon the reverse the appearance of a nucleated circle beneath the horse is counterbalanced by another with an additional circle of dots or pellets about it above the animal's back. Upon the reverse is the name of a prince, TASCIOVAN, whose Latinized name would be TASCIOVANUS, the exact form in which the name appears upon the coins of Cunobeline, who proclaims himself to have been TASCIOVANI F.

Fig. 2. On this piece the cruciform ornament becomes still more intricate, while the circles are in various forms and of various types.

Fig. 3. The remains of the wreath are undefined, and the object beneath the horse has assumed a stellar form instead of a circle, which in turn was a helmet in the prototype.

Figs. 4–7. These coins are cast and not stamped. In some specimens noted by Doctor Evans the grain of the wooden mold is distinctly visible. The obverse in all bears a head in imitation of some petroglyphic remains in North America, though the reverse shows the outline of an animal believed to be a horse.

Fig. 8. This specimen has a laureate bust without any signs of a face; the open crescents are connected by a serpent line. The reverse bears a horse with a triple tail and a wheel beneath the body.

plate 46, fig. 1. Very interesting indeed are the coins of tin—or an alloy in which that metal is in excess—though these are believed to be Gaulish rather than British, although the head of the Philippus prototype is rudely reproduced, while the animal upon the reverse is believed by Doctor Evans to represent a bull rather than the horse. Plate 47, figs. 4, 5, 6, and 7.

The human head upon the obverse is the rude representation of that part of the body, the face being indicated by two crescents, one above the other, with the concave side outward. The eye consists either of a simple ring, a nucleated ring, or the latter attached to a stem which extends down toward the neck. The animal form upon the reverse is readily determined by comparison with other coins showing variants.

The two characters beneath the animal form on plate 47, fig. 4, appear to be a remnant of or to have been suggested by the exergual legend on the prototype on which the name, in Greek characters, of Philippus occurs.

On some of the British coins no trace of a legend remains, but in a few instances some apparently meaningless characters appear to have been introduced, clearly indicating that the engraver was aware of some legend upon his copy, but being unacquainted with its import or signification, introduced an equivalent in so far as ornamentation was concerned, following the custom of geometric decoration. Such an illustration is here reproduced on plate 46, figs. 3, 4, and 7. In other examples again, this style of zigzag decoration is omitted below the exergue line and a nucleated circle portrayed instead of a legend or other character, as in plate 47, fig. 1.

The wheel of the chariot, which is apparent in the prototype, is generally oval, sometimes elliptical, and in some of the British imitations a second wheel is placed upon any remaining otherwise vacant spot, such an illustration being reproduced on plate 47, fig. 3, while in plate 46, fig. 8, two wheel-like characters are introduced, one above the body of the horse and the other beneath, instead of the common nucleated ring. In examining the numerous examples of coins one finds too that the British engraver has introduced, instead of the figure of a charioteer, a number of disjointed pellets or rings, and short straight or curved lines, making it almost impossible to trace the original in this jumble of characters. In some instances these segregated dots and lines again appear to become readjusted, ultimately forming a charioteer in the form of what seems to be a winged figure of victory.

Similar unique and interesting imitations occur on the obverse of the British coins, in which the engraver's interpretation of the head of Apollo (or Hercules) is shown, sometimes as a fanciful cross, plate 47, fig. 1, and in other instances as an ear of grain, examples being shown in plate 46, figs. 3, 5, and 7.

In this use of the circles, nucleated rings, and other British or Gaulish symbols upon British coins, no evidence appears of the transmission

of such characters from Macedonia, from which the coins were obtained, and which furnished the designs upon the Philippus for the British and Gaulish engravers. Nevertheless, other of the Macedonian coins bear upon the reverse concentric rings, between which are serrations, so as to almost appear like circular saws of various sizes laid one upon the other, diminishing in size toward the upper or last one. On a coin of Herod I., bearing a Macedonian shield, while upon the obverse of the same piece is a helmet, with cheek pieces, surrounded by a legend. The helmet, which appears to form the chief emblem upon the piece, greatly resembles the smaller headpiece upon the obverse of the stater shown in plate 46, fig. 1.

Mr. Gardner,[1] in his paper on "Ares as a sun god, and solar symbols on coins of Thrace and Macedon," shows that the Macedonian shield is of astronomical pattern, and belongs specially to a deity who is worshiped as the sun, and the interior device of this shield on the coins of Herod I. is identical with that adopted as the whole type on certain coins of Uranopolis of Macedon.

The occurrence of circles to denote ring money is found in the Egyptian hieroglyphs, and it is barely possible that such characters upon obelisks, or in other petroglyphs, may have had some reference to ring money in the various countries with which the Egyptians were in commercial relations, extending possibly to Macedonia, Phœnicia, and other of the peoples of the northern shores of the Mediterranean.

The Egyptians used rings of gold and silver, and the Hebrew expression for the heaviest unit in weight, the talent, originally meant a circle. Gold rings, says Mr. Madden,[2] were also used as a means of exchange in Britain, in the interior of Africa, among the Norwegian sea kings, and in China disks with central perforations are employed. The brass cash is an illustration of the latter, and the sacred writings make frequent reference to rings of metal and strings of gold, the latter evidently being tied in bundles of certain specified weights and values.

Interesting as this subject may be, it would be inappropriate in the present paper to continue the study of types of rings and variants and their signification in the various localities throughout the world in which they occur as originals, and as the result of intrusion by intertribal traffic or otherwise.

The wooden tablet represented in plate 33 is reproduced from Doctor Stolpe's monograph, published in "Ymer,"[3] and illustrates one characteristic type of wood carving found in Polynesia, or, to be more exact as to location, in the Tubuai Islands. The circles are rather infrequent, but the triangular decoration is more common, and occurs upon various ceremonial implements and weapons in various forms and combinations. In some examples the designs are very complicated

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[1] Num. Chron., new series, 1880, XX, quoted from Madden's Jewish Coinage.

[2] Coins of the Jews, F. W. Madden, London, 1881.

[3] Stockholm, 1890, fig. 16.

and elaborate, while in other instances, as upon a metal surface, the result is a mere zigzag, the result of using a narrow graver, and as it is pushed forward the tool is rotated from side to side.

The character of the material upon which decoration is attempted greatly influences the artistic result.

Some circles from eastern Turkistan, to which my attention was called by my friend Doctor Walter Hough, of the National Museum, resemble almost exactly those mentioned by Doctor A. B. Meyer, who presented some interesting illustrations of shields from the Bismarck Archipelago and New Guinea, upon some of which are several series of concentric rings (four) while some are nucleated with a solid spot and three surrounding rings.[1]

In his monograph on the whirring toy or "bull-rorer," Doctor J. D. E. Schmeltz[2] presents a number of illustrations from various localities, nearly all of which are ornamented. Two specimens from West Australia are of peculiar interest, from the fact of the recurrence of two figures shown on a Roman lamp from Carthage (plate 45, p. 816). The

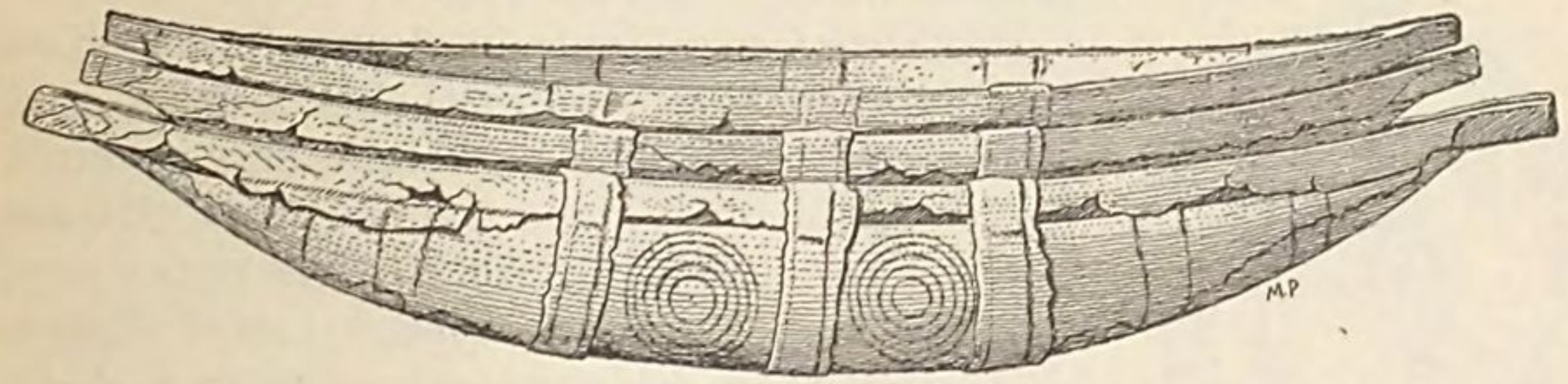

Fig. 38.

GOLD BOAT FOUND AT NORS, DENMARK.

one specimen of these wooden toys is ornamented with five figures of concentric circles, the three middle ones having each five rings, while the flanking or end figures have each but four rings.

The other toy has upon one side three figures of rectangles, each figure consisting of a nest of five, one within the other, as in the construction of concentric rings. At either end are short curved lines. Such a coincidence—as it can be nothing more—is truly remarkable, especially as the Australian designs are not in exact accordance with the usual type of designs.

The district of Thisted, Denmark, contains many small grave mounds, from some of which unique finds have been obtained. One clay vessel covered with a flat stone contained about one hundred small boats, the ribs and sailing of which are made of bronze bands bent around one another, while in the middle of these lie sheets of thin plates of gold whose corners overlap each other at the bottom of the boat and are bent around the bronze bands above, covering it. In the same manner

[1] Publicationen aus dem Kongl. Ethnog. Museum Dresden. X. 1895. Plate XVIII, figs. 3, 4, and 5.

[2] Das Schwirrholz. Hamburg, 1896.

the outside covering is effected.[1] Upon the side of the boat illustrated in fig. 38 will be observed two figures of concentric rings, a design so frequently met with in the prehistoric relics of Scandinavia.

A wooden dish,[2] found with other objects in a funeral ship, bears decorations consisting of concentric rings similar to the preceding.

Petroglyphs in abundance representing so-called cup stones, nucleated circles, and concentric circles of various numbers of rings, as high as five and six, and occasionally even more, occur throughout northern Europe, from Ireland, Scotland, and elsewhere in the British Isles, eastward throughout Scandinavia, Finland, and Russia, into Siberia.

In a petroglyph at Lokeberg, in Bohuslan, Sweden,[3] are represented a number of manned Viking ships, above three of which are portrayed nucleated rings, several of which are attached to projections connected with the vessel, and resembling uplifted banners or other emblems. In a number of instances are small spots only, without the surrounding circle. These circles in contact with vessels resemble very much the Eskimo engraved figures on the rod shown in another place on plate 68, fig. 6.

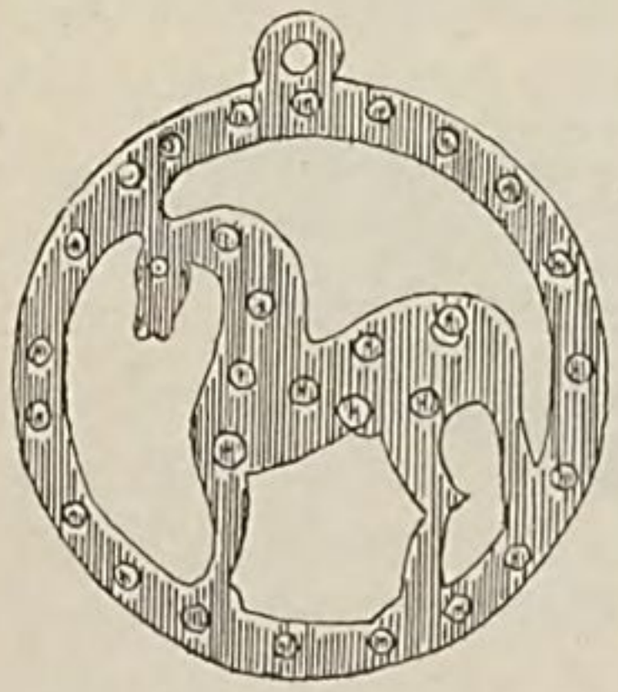

Fig. 39.

SAMOYAD ORNAMENT OF METAL.

Professor Oscar Montelius figures in his "Kultur Schwedens in Vorchristlicher Zeit" a gold vase nearly 3 inches in height and about 4 inches in diameter, about the body of which are four rows of concentric circles. The upper row, near the neck, consists of such raised figures each more than one-sixteenth of an inch in diameter, while the row a short distance below this consists of rings averaging three-sixteenths of an inch across. Below the greatest diameter of the vessel is another row of raised concentric rings, the outer one measuring about five-eighths of an inch across, while the circles near the base, and extending in a row about it, are apparently a little less in diameter.

These rows of circles are separated by longitudinal raised lines, between some of which, both above and below the row of the largest circles, are short vertical lines presenting what appears like a milled edge.

This style of ornament is very general and, as noted elsewhere, of widespread occurrence.

Mr. Frederick George Jackson, in his description of the jewelry of the Samoyads,[4] says that the bonnet is adorned with tails of colored

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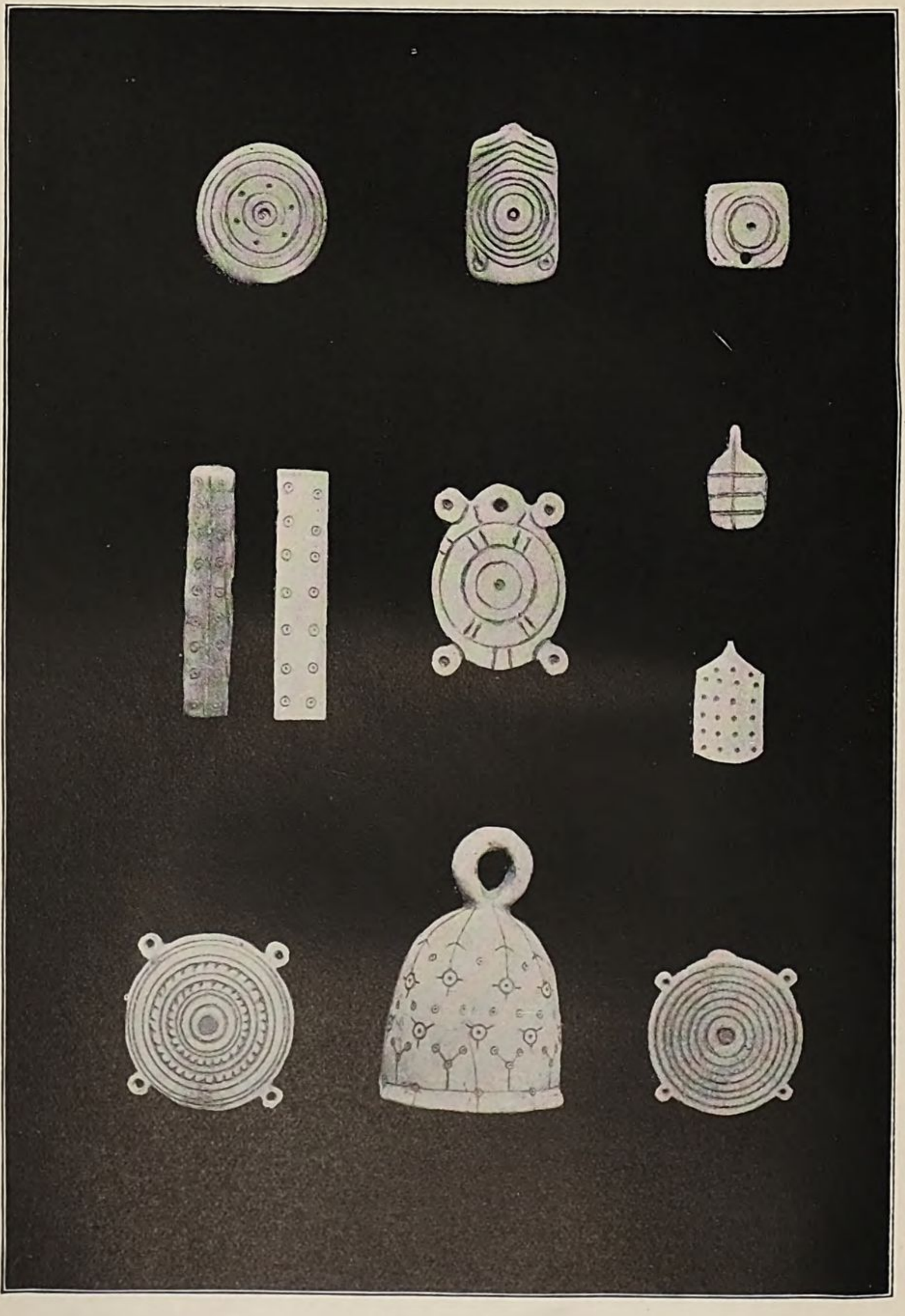
[1] Quoted from Report of National Museum for 1891, 1892, pp. 557, 558, fig. 41. (Prehistoric Naval Architecture, Geo. H. Boehmer.)

The reader is referred to an interesting paper on *Origins of Prehistoric Ornament in Ireland*, completed in Part I of Vol. VII, of the Journal of the Royal Society of Antiquaries of Ireland, for 1897, by Mr. George Coffey.

[2] Report of the United States National Museum for 1891. 1892, p. 594, fig. 108.

[3] Oscar Montelius, Die Kultur Schwedens in Vorchristlicher Zeit, Berlin, 1885, p. 73, fig. 87.

[4] The Great Frozen Land. London, 1895, p. 67.



ORNAMENTED IVORY JEWELRY.

EXPLANATION OF PLATE 48.

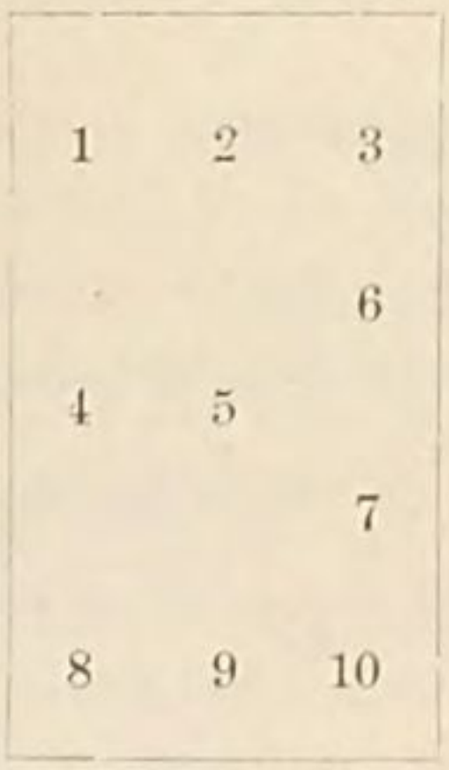


Fig. 1. EAR PENDANT.
(Cat. No. 36845, U. S. N. M. Kuskunuk. Collected by E. W. Nelson.)

Fig. 2. EAR PENDANT.
(Cat. No. 36846 [?], U. S. N. M. Big Lake, Alaska. Collected by E. W. Nelson.)

Fig. 3. EAR PENDANT.
(Cat. No. 36845, U. S. N. M. Kushkakwin River. Collected by E. W. Nelson.)

Fig. 4. EAR PENDANTS.
(Cat. No. 36839, U. S. N. M. Lower Kushkakwin River. Collected by E. W. Nelson.)

Fig. 5. EAR PENDANT.
(Cat. No. 48742, U. S. N. M. Yukon River. Collected by E. W. Nelson.)

Figs. 6, 7. EAR PENDANTS.
(Cat. Nos. 36845, 36846, U. S. N. M. Kuskunuk. Collected by E. W. Nelson.)

Fig. 8. EAR PENDANT.
(Cat. No. 38416, U. S. N. M. Big Lake, Alaska. Collected by E. W. Nelson.)

Fig. 9. POWDER CHARGER.
(Cat. No. 127460, U. S. N. M. Ikalnik. Collected by J. Applegate, U. S. Signal Corps.)

Fig. 10. EAR PENDANT.
(Cat. No. 38169, U. S. N. M. Nulukhtulugumut. Collected by E. W. Nelson.)

strips of cloth, to which are attached "brass disks (about 3 inches in diameter) and other ornaments, such as brass charms, beads, and buttons." It is probable that these materials are specially made in Russia for trade with the natives; nevertheless the nucleated circle is an important feature in ornamentation thereon, the metal pendant, of which an illustration is given in fig. 39, being not only very similar to the prehistoric ornaments of Scandinavia, but is decorated in the same manner.

Mr. Jackson says furthermore: "While I am talking about Samoyad jewelry, I might mention the vast buckles sometimes used to fasten the belt. They are made of brass, stamped out with patterns, and are often 9 inches in diameter. Of brass, too, and copper are their rings; and they even wear reindeer bells, each weighing at least half a pound, hanging from their elbows."

It is but natural to suppose that native art is thus stimulated, and influenced, by the probable introduction of materials of foreign manufacture, such trinkets being gaudily decorated to add to their attractiveness in the estimation of the uncultured natives.

DECORATION OF PERSONAL ORNAMENTS, UTENSILS, ETC.

The utilization of various figures to apply simply for ornamentation is very common, and is of later date than the incision of simple lines and dots. The animate and other characters do not seem to have been used in any æsthetic manner until the system of pictography had gained a firm foothold. Numerous examples are here given of simple decoration of drill bows, for which no other record was ready, and of the various styles of decorating articles of primitive jewelry or personal ornaments, and other objects of daily use.

The following list comprises a number of selections to illustrate the various methods of decorating articles of personal use or adornment, utensils of daily use, and other objects.

A number of ear pendants are represented in plate 48, figs. 1–8 and 10. The chief interest lies in the variety of ornamentation, consisting of drill holes, circles, concentric rings, and in one instance serrations are attached to the circles.

The cup-shaped specimen shown in fig. 9 is a powder charge, ornamented with conventionalized figures of flowers, fruit, etc., to which special attention is given in connection with conventionalization.

Plate 32, fig. 1, represents ear pendants made of beluga teeth. They were obtained at St. Michaels, and are ornamented with the zigzag pattern frequently alluded to as the "fish trap" pattern. This pattern is quite neatly made and presents an unusually pleasing effect. Upon the bare space between the two transverse rows of ornamentation is incised a small cross—a figure quite unusual in Eskimo art.

Plate 32, fig. 2, represents a buckle or ornament used by girls in securing the hair. The decoration represents a face, the eyes being

indicated by sharply incised lines, while the pupils are perforations made with a drill. The nostrils are also indicated with delicate perforations, and the teeth are well defined. The lips are also well defined by means of transverse lines representing the gums and the edges of the teeth, while the other lines drawn vertically denote the spaces between the teeth.

Plate 32, fig. 4, represents a comb from Cape Prince of Wales. This is of peculiar interest from the fact that it exactly represents in outline specimens from Torres Strait. The ornamentation resembles Papuan art designs, and also the peculiar meander or zigzag pattern referred to in plate 33.

On the inner space are three ornaments which represent the conventional tree symbols. The specimen is an old one, as may be observed from its past usage and discoloration. The teeth are broken and appear to have been short. They were no doubt made by sawing with instruments such as are shown in plate 17.

Plate 49, fig. 4, represents a pair of earrings secured in a stick. Upon the front are ornamental incisions representing concentric rings, from four sides of which extend short lines terminating in perforations. In one of these, however, the short connecting lines were not inserted—this part of the operation having evidently been neglected.

Upon the reverse are short projections which are carved so as to curve downward, forming an Γ-shaped hook for insertion in the lobe of the ear.

Plate 49, fig. 5, shows a similar stick with wrapping so as to secure a number of earrings which have been inserted, and in which manner they are transferred from place to place for sale or for barter.

Plate 50 represents a series of carved ivory belt buttons and pendants, as well as two spear guards for attachment to a canoe. On fig. 1 is shown the crude meander or zigzag so frequently referred to. Upon the outer surface of these figures appear small tridents which represent trees, or rather they may be termed the conventional ornamental figure evolved from the tree figure or tree design. A simple meander or triangle is shown upon the button in plate 50, fig. 2, in which, it will be observed, the meander is produced by the interdigitation of short lines attached to the parallel lines within which the meander crosses.

Figs. 3, 4, and 6 have circles with various decorations, that upon fig. 4 being perhaps the flower symbol, described elsewhere in detail.

The ivory button shown in fig. 5 is decorated by simple perforations, each of which is filled with a wooden peg, the arrangement of the perforations being regular and symmetrical.

Plate 51 illustrates six forms of bone belt fasteners or toggles. The specimen shown in fig. 1 was collected by Mr. L. M. Turner at Norton Sound, and measures $2\frac{1}{8}$ inches across. Within the upper and lower margins are five horizontal incised lines, while along the vertical edge there are but four each. Upon the inner line and directed inward are

EXPLANATION OF PLATE 49.

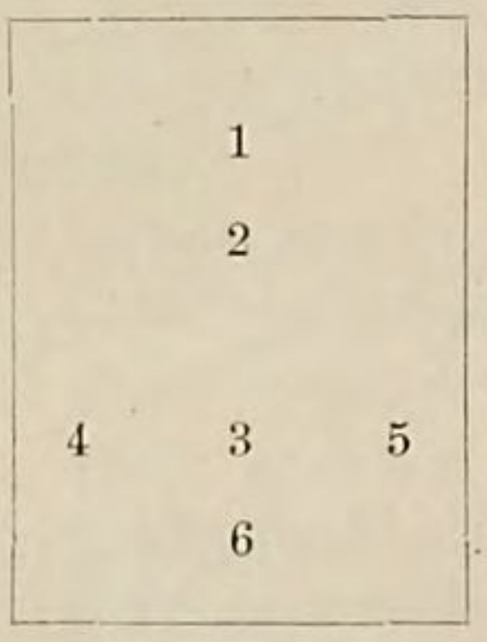


Fig. 1. IVORY IMPLEMENT.
(Cat. No. 37664, U. S. N. M. Konigunogumut. Collected by E. W. Nelson.)

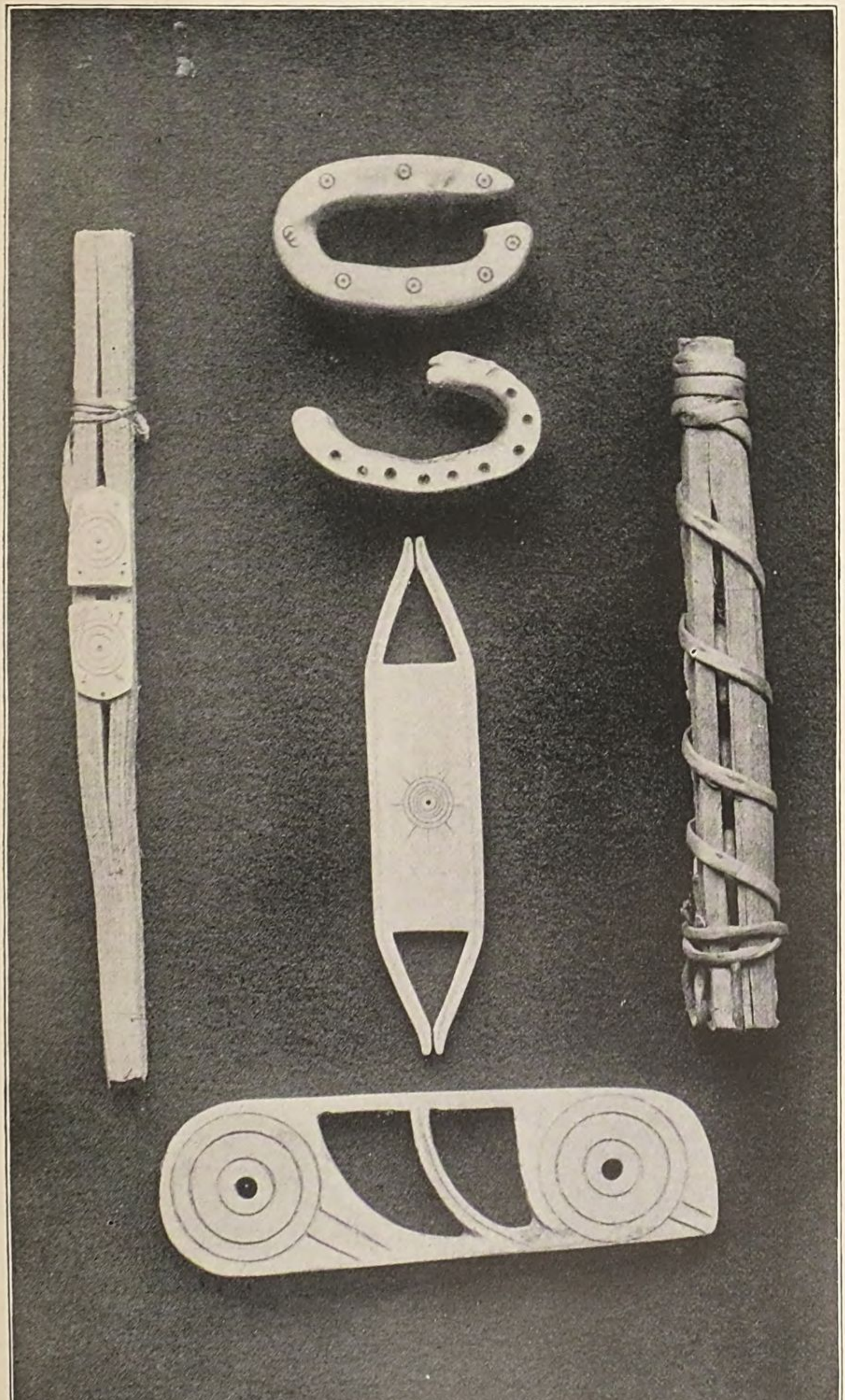
Fig. 2. IVORY IMPLEMENT.
(Cat. No. 29618, U. S. N. M.)

Fig. 3. NET SHUTTLE.
(Cat. No. 35908, U. S. N. M. Aleutian Islands. Collected by L. M. Turner.)

Fig. 4. EARRINGS IN WOODEN HOLDER.
(Cat. No. 36861, U. S. N. M. Askenuk. Collected by E. W. Nelson.)

Fig. 5. EARRINGS IN WOODEN HOLDER.
(Cat. No. 36011, U. S. N. M. Agaiyukchugumut. Collected by E. W. Nelson.)

Fig. 6. IVORY ORNAMENT FOR ALEUT HAT.
(Cat. No. 38720, U. S. N. M. Collected by E. W. Nelson.)



DECORATED ORNAMENTS AND UTENSILS.

EXPLANATION OF PLATE 50.

Fig. 1. CARVED BELT FASTENER.
(Cat. No. 38567, U. S. N. M. Mouth of Lower Yukon River. Collected by E. W. Nelson.)

Fig. 2. CARVED BELT BUTTON.
(Cat. No. 33633, U. S. N. M. St. Michaels. Collected by E. W. Nelson.)

Fig. 3. BELT BUTTON.
(Cat. No. 38003, U. S. N. M. Chalitmut. Collected by E. W. Nelson.)

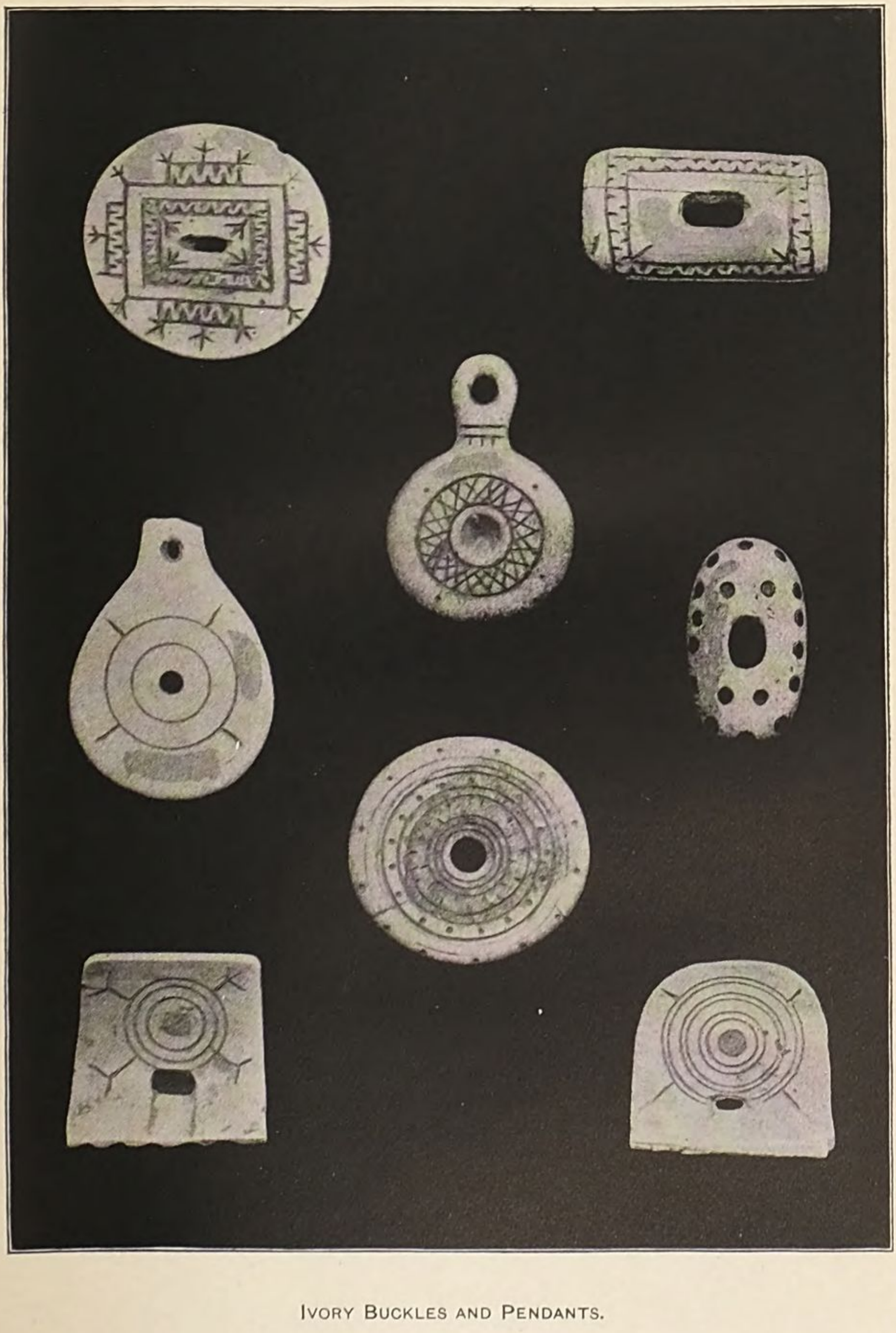
Fig. 4. BELT BUTTON.
(Cat. No. 37761, U. S. N. M. Kongigunogumut. Collected by E. W. Nelson.)

Fig. 5. BUTTON.
(Cat. No. 48630, U. S. N. M. Kotzebue Sound. Collected by E. W. Nelson.)

Fig. 6. BELT ORNAMENT.
(Cat. No. 38152, U. S. N. M. Lower Yukon. Collected by E. W. Nelson.)

Fig. 7. SPEAR GUARD FOR KAIAK.
(Cat. No. 35983, U. S. N. M. "Sfugunugumut." Collected by E. W. Nelson.)

Fig. 8. SPEAR GUARD.
(Cat. No. 43536, U. S. N. M. Cape Vancouver. Collected by E. W. Nelson.)



IVORY BUCKLES AND PENDANTS.

EXPLANATION OF PLATE 51.

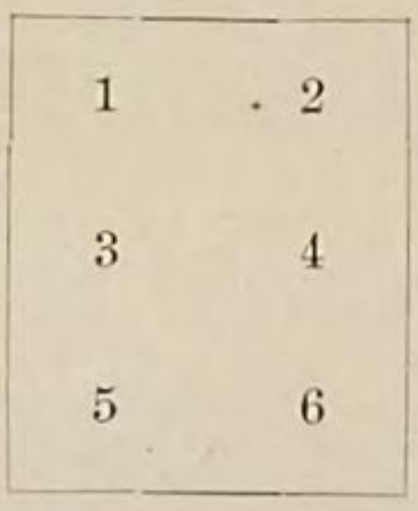


Fig. 1. BELT FASTENER, TOGGLE OR BUCKLE.
(Cat. No. 24664, U. S. N. M. Norton Sound. Collected by L. M. Turner.)

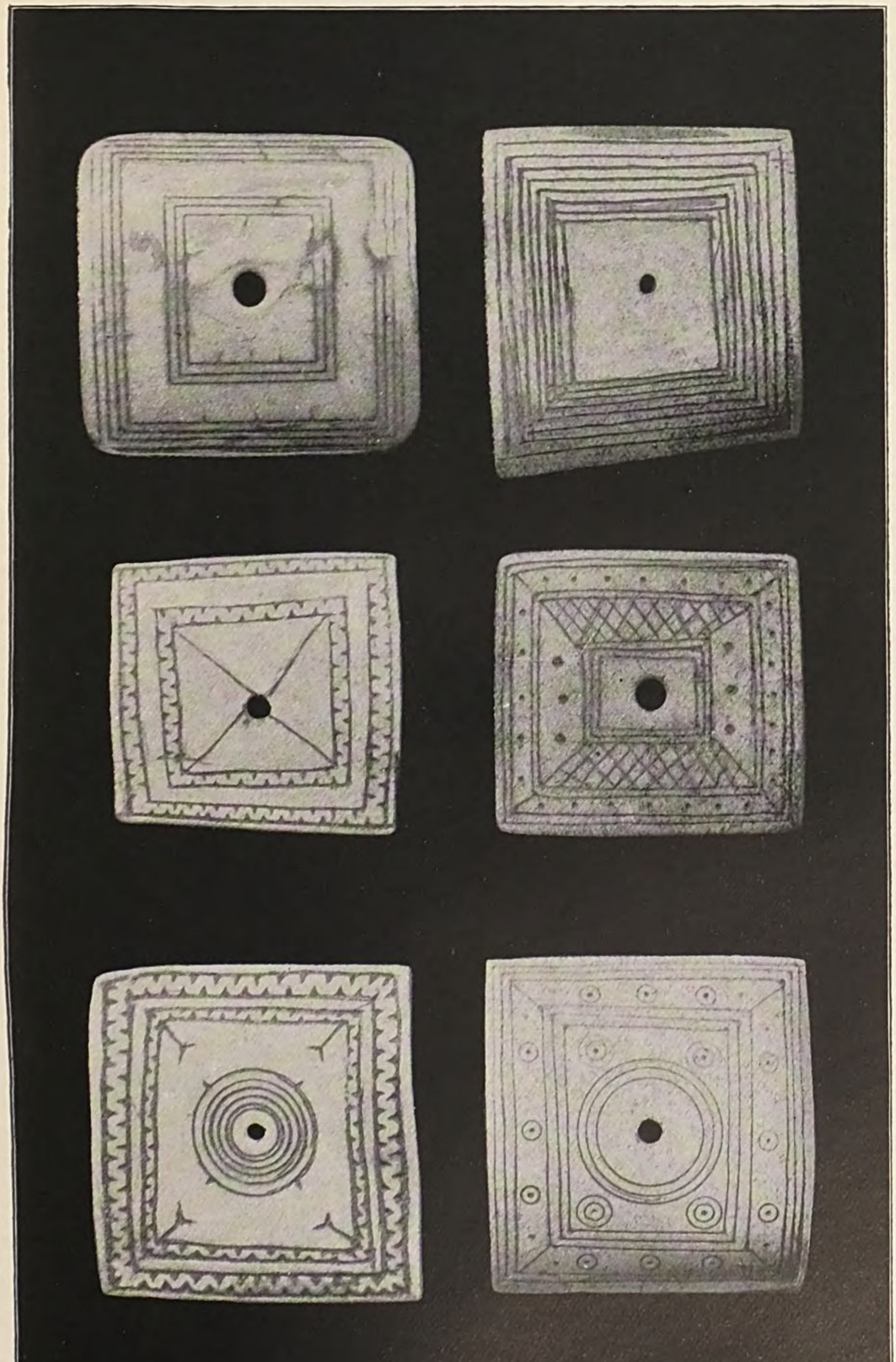
Fig. 2. BELT FASTENER, TOGGLE OR BUCKLE.
(Cat. No. 24616, U. S. N. M. Norton Sound. Collected by L. M. Turner.)

Fig. 3. BELT FASTENER, TOGGLE OR BUCKLE.
(Cat. No. 24612, U. S. N. M. Norton Sound. Collected by L. M. Turner.)

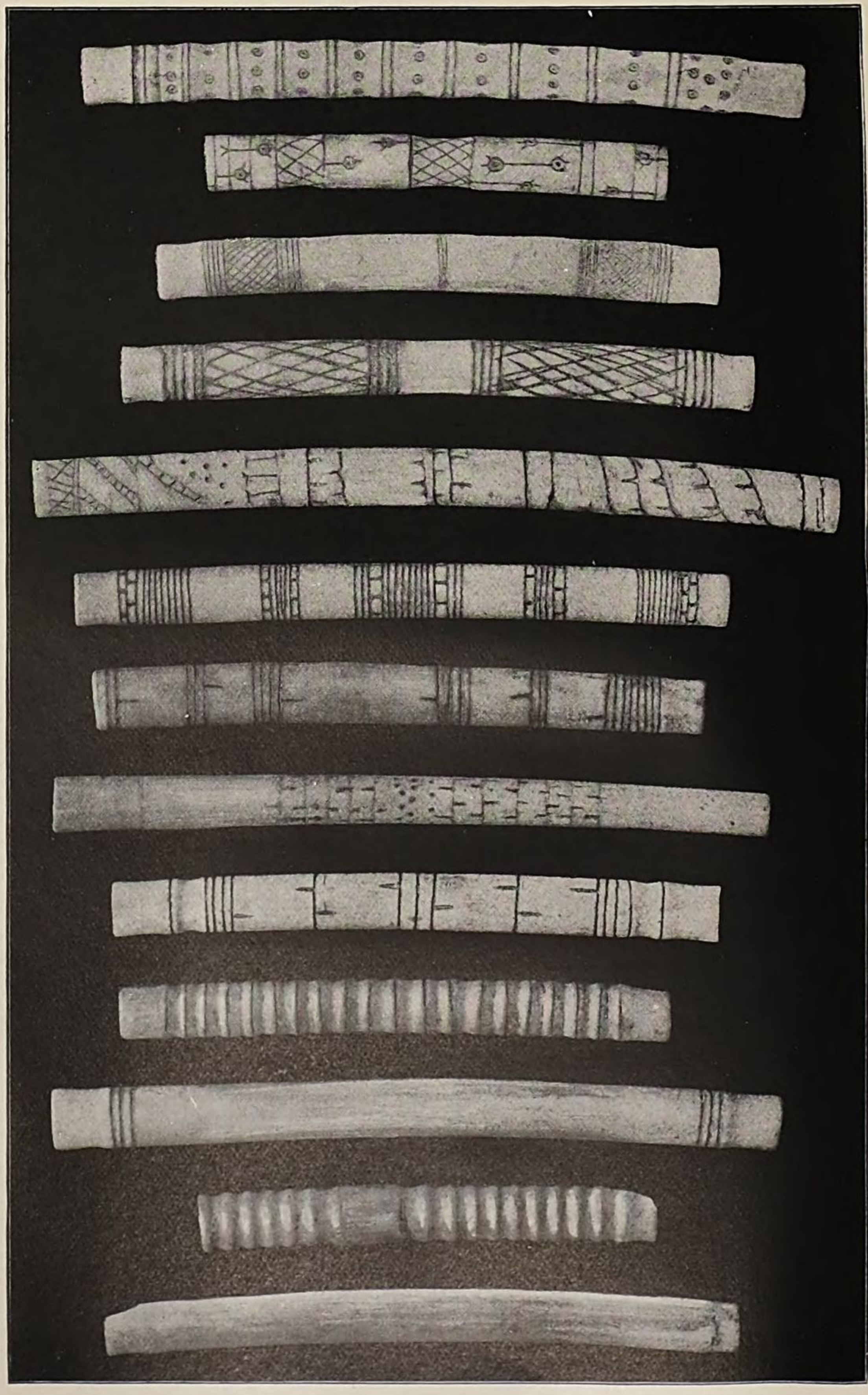
Fig. 4. BELT FASTENER, TOGGLE OR BUCKLE.
(Cat. No. 37992, U. S. N. M. Pinuit. Collected by E. W. Nelson.)

Fig. 5. BELT FASTENER, TOGGLE OR BUCKLE.
(Cat. No. 24663, U. S. N. M. Norton Sound. Collected by E. W. Nelson.)

Fig. 6. BELT FASTENER, TOGGLE OR BUCKLE.
(Cat. No. 5622, U. S. N. M. Premorska. Collected by W. H. Dall.)



IVORY BUCKLES OR TOGGLES.



SNUFF TUBES AND NEEDLE CASES.

short incisions, each one-sixteenth of an inch in length. Surrounding the central perforation is a quadrilateral figure conforming to the outline of the ornament, consisting of three incised lines one-sixteenth of an inch apart. Upon the inner sides of the square are similar short lines directed upward toward the interior, as upon the inner line of the outer square.

In plate 51, fig. 2, also from Norton Sound, the ornamentation consists of eight lines running parallel with the four outer borders, the interior space about the central perforation being blank.

In plate 51, fig. 3, also from Norton Sound, the ornamentation becomes a little more complex. The two sets of parallel lines around the interior form a square. Within each set of lines thus drawn are markings so placed as to form a crude zigzag resulting from the short lines projecting alternately outward and inward by a process resembling what might be termed interdigitation. This has some resemblance to or suggests the Papuan patterns, to which reference is made elsewhere. The interior space about the central perforation is ornamented by two lines forming a cross.

In plate 51, fig. 4, there is shown a buckle from Pinuit, Alaska, and both lines and dots are employed in ornamenting the surface. The squares are present as in the preceding record, while small perforations occupy the space between the groups of lines.

In plate 51, fig. 5, from Norton Sound, the outer border consists of two decorated figures, while surrounding the central perforation are six concentric rings, four short lines diverging from the outer ring toward the outer angles of the ornament. From the inner angle of the inner quadrilateral figure are four short lines, each terminating in a V-shaped figure, or bifurcation, rudely resembling the conventionalized whale tail, though in this instance more likely denoting a tree, as it also represents a conventionalized tree figure.

In plate 51, fig. 6, from Premorska two series of lines are drawn, with the difference, however, that instead of bearing additional ornamentation between the two quadrilateral figures the ornamentation consists of nucleated circles, three upon each side, while within the inner square and surrounding the central perforation are three concentric rings. The space beyond the outer ring and the angle of the inner square is filled with small figures consisting of a spot surrounded by two concentric rings.

Upon plate 52 are shown thirteen figures of needle cases or snuff tubes, upon which are shown various styles of ornamentation. The specimen at the extreme left, from the Lower Yukon, is octagonal, while the next shows a series of rings produced by filing, as in the fourth figure, and to a certain extent in the last. The encircling hands upon figs. 5, 6, 7, 8, and 9 illustrate in various ways the rudimentary forms or originals from which have developed that peculiar meander or zigzag to which reference is made in various places and in various

connections, and which has been compared to a certain degree with the Papuan ornamentation referred to by Mr. Alfred C. Haddon. Upon the two figures at the right hand are a series of small, nucleated rings, and particularly in fig. 12 are shown several instances in which these rings are surrounded by radiating lines, a bottom line extending to a transverse base line or attached to another nucleated circle of like form. These may be related to the flower symbols, to which Mr. Lucien M. Turner makes reference in the letter which I have quoted.

Plate 35, fig. 9, shows a tobacco box from Sledge Island. It is a rude imitation of a seal, a small opening being cut in the neck, while the rear end was at one time undoubtedly closed by means of a wooden plug. The ornamentation throughout consists of parallel lines between which the incisions of short transverse lines are so arranged as to indicate the rude meander or zigzag pattern. Upon the back are several conventional tree patterns.

Plate 25, fig. 1, represents an ivory casket from St. Michaels. It is made of the upper hollow portion of a walrus tusk and is very profusely illustrated with the zigzag pattern, borders of which encircle the specimen both above and below, while around the center is an almost continuous pattern of six nucleated circles, each connected with the other by means of continuous strips or zigzag ornamentation. Between the two outer rims of each of these ornaments we find the fish trap pattern, in some the plain zigzag, in another short transverse lines, etc., showing various degrees of ornamentation of the same general type. Radiating from the outer circles of all the specimens are short vertical lines at four opposite points, in imitation of the flower symbol. On the remaining spaces between this central ornamentation and the two outer margins are rows of small circles similarly ornamented within by concentric rings and upon the outside by radiating lines.

The round box illustrated in plate 34, fig. 3, is from Norton Sound. This was used for holding fishing tackle. The top and bottom are made of wood, while the circular band is made of a flat piece of reindeer horn securely lashed together at the joints by means of two iron and one copper clasp attached longitudinally. The surface of this band of horn is very neatly ornamented around the upper portion in zigzag pattern, while the corresponding border below has been left plain. Between these two borders, however, are a series of figures of concentric circles very neatly incised and arranged alternately, first a large circle, then two small ones. Each of these figures is furthermore ornamented by four radiating lines resembling the flower symbol, although from the great number of concentric circles within it there is suggested rather the idea of the symbol used to denote the nests of kantags or wooden buckets obtained by barter from the Chukchi of the Asiatic side.

Plate 35, fig. 5, represents a bone "mouthpiece" from Diomede

Island. The ornamentation upon this is rude and deeply incised, consisting of a base line of two parallel incisions, between which is the rude meander or zigzag, to the top of which are incised at regular intervals trident figures representing the conventional tree symbol. Similar incisions and markings appear also upon a larger specimen from the same locality, shown in fig. 7.

Plate 32, fig. 5, shows a specimen without any indication to mark the locality from which it was obtained, although from its association with the collections from Alaska it may be inferred that it was made by some one of the native tribes, very likely the southern or southeastern natives, who have intermarried with the Thlingit, or possibly the Thlingit themselves, although the carving very greatly resembles that copied after the work of the Haida. In almost any position in which the specimen may be held faces appear. Upon the lower side is the representation of a face the expression of which is exactly like that in fig. 3, while the front or rounded portion of the ornament shows a perfect snake's head, though this was probably intended to represent a seal. The ornament appears to have been used for attachment to the end of a cord, probably in harness or on some weapon.

Plate 13 represents three figures of bone seine shuttles or handles from the Yukon River. The ornamentation upon fig. 1 is very simple. It consists of diagonal lines between two horizontal ones, with the exception of a small space about the upper third, where half a dozen lines cross at the opposite angle. Upon fig. 2 the lines are closer together, and in the lower figure very short lines are attached so as to extend at right angles from their respective base lines. These are of that primary type forming the base of the "fish weir" or "fish trap" pattern, which in turn forms the base of the rude angular meander and ultimately of the zigzag, to which reference is made elsewhere.

In fig. 3 the ornamentation consists first of two horizontal parallel lines extending along each outer border. Between each pair of lines are short lines forming zigzags. The interior spaces are filled with other patterns. At the upper end is an animal, apparently representing a wolf, with the life line upon the body, while at the lower extremity is the outline of a beaver. At the two small triangles formed by the cross lines at the middle of the specimen are two small trees, simply decorative, and intended to fill the blank space.

Plate 49, fig. 3, represents a very beautiful net shuttle obtained in the Aleutian Islands by Mr. L. M. Turner. The only ornament of any consequence on this represents a figure of concentric rings, from which radiate eight delicate lines. This is probably a highly conventionalized figure of the flower symbol, though in the pictography of the Ojibwa and some of the Shoshonian tribes it would denote the symbol of the sun.

The superiority of the workmanship is apparent, and is characteristic of that of the southern Alaska, or rather the Aleutian, natives.

Plate 23, fig. 1, represents a reel for sinew for small nets, obtained

at Cape Vancouver, Alaska, by Mr. E. W. Nelson. The specimen is made of bone, and is decorated with incised lines extending from point to point along either edge, with interior markings of short lines, as shown on the specimen.

Plate 23, fig. 4, represents a fishing implement made of reindeer horn. It is slightly curved and forked at either end, three of the four ends terminating in heads, probably that of the seal. The chief decoration consists of a median line extending from end to end, to which are attached several pairs of characters representing the herring bone pattern, though with the addition of short outer lines.

The perforation visible in the center is intended for holding a drill.

Plate 35, figs. 1, 2, and 3, represents small ivory thimble holders or guards. The ornamentation upon these is different, that upon fig. 1 and fig. 2 consisting, respectively, of simple borings or depressions and concentric rings, while upon fig. 3 appears a continuous line, to which are attached several pairs of short oblique radiating lines, as in plate 29, fig. 1.

Plate 35, fig. 4, represents a seine thimble holder from Kushunuk. This is a rude outline of a seal with the young placed transversely to its back, while the ornamentation consists of several sizes of concentric rings, two of which show radiating lines attached to the outer surface.

Plate 35, fig. 6, represents a thimble guard from Unalakleet. The ornamentation upon this is in imitation of that from the Northwest Coast northward from Kotzebue Sound, and consists almost exclusively of various patterns of the zigzag or meander design.

Plate 23, fig. 3, is marked in the catalogue as a bone grass comb, from Kotzebue Sound. Mr. Murdoch, who has examined the specimen in my presence, believes it to be simply an ordinary comb for personal use. The ornamentation is divided into two panels, separated by four parallel transverse lines, each about one-eighth of an inch from the other. Short lines, placed closely side by side, radiate from the inner lines toward the outer. These inner lines with short radiating lines are reproduced at either end of the specimen. Reference to the illustration will more clearly represent this. In the upper panel is the portrayal of a whale, with some other lines probably intended to denote whales, but the figures were not completed. There is also a depression, which was used for the insertion of the top of a drill. The lower panel contains several pairs of parallel lines, between which is the rude outline of a steamboat representing a revenue cutter.

Plate 49, figs. 1 and 2, represents ivory implements, probably used in connection with harness. The former is decorated with a series of nucleated rings, all of one size and apparently made with the same instrument, while on the latter the rings are replaced by simple perforations, some of which are about one-eighth of an inch in depth and were subsequently filled with a hard gummy substance. The most of them have now become emptied of this material.

The representation of the two snow shovels, fig. 40 *a* and *b*, is to indicate the manner of attaching the ivory cutting edges upon which some of the engravings described are found. The wooden portion is generally made of spruce; the several pieces comprising the shovel, as above shown, are secured together by means of sinew braid. They are used for all kinds of shoveling in the snow, and sometimes for excavating in snowdrifts, for making pitfalls for game, etc. The edge of the wood is fitted with a tongue into a groove in the top of the ivory edge, which is 1½ inches deep. It is fastened on by wooden treenails at

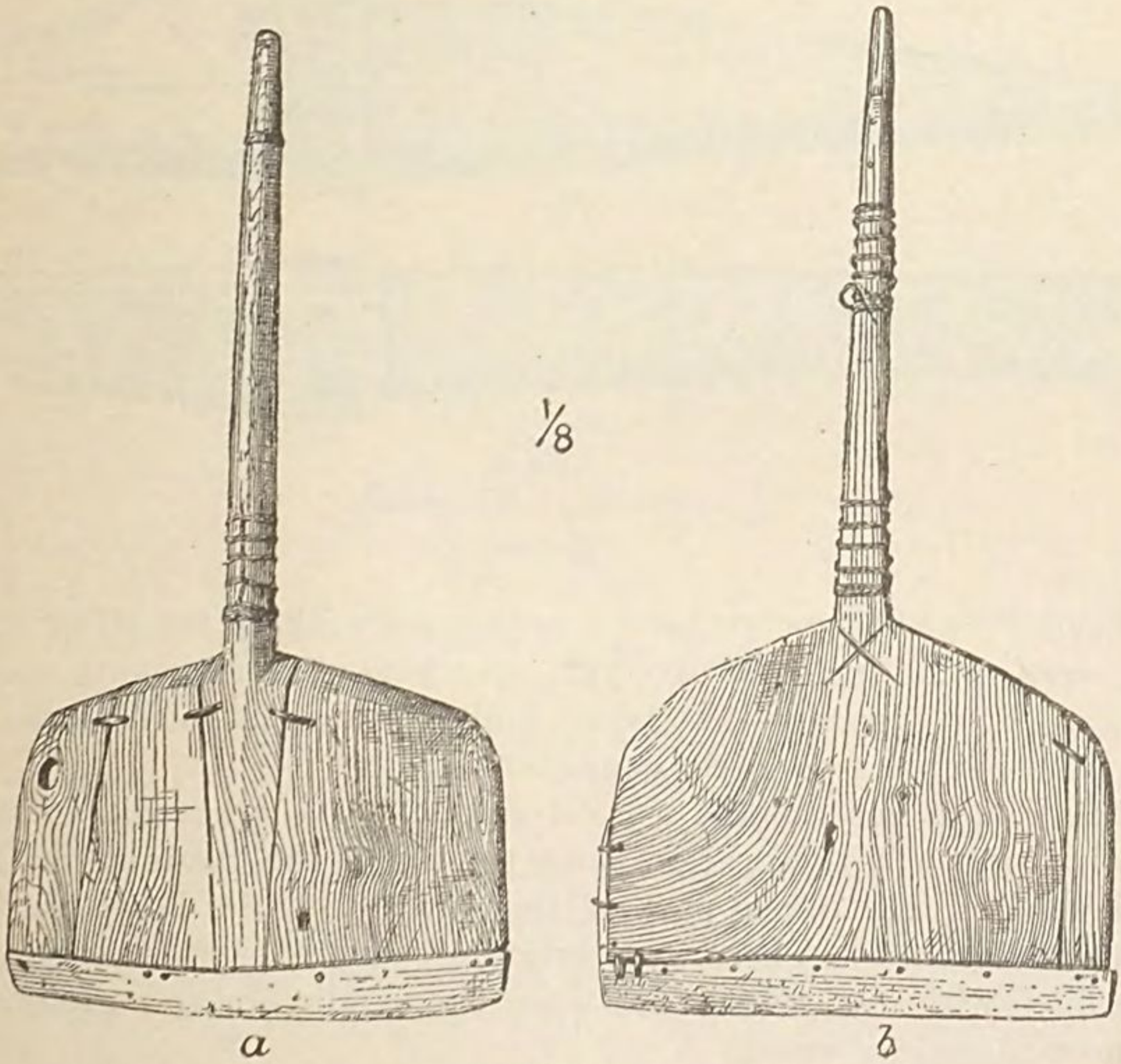


Fig. 40.

SNOW SHOVELS.

irregular intervals, and at one end, where the edge of the groove has been broken, by a stitch of black whalebone. * * * The whippings of sinew braid on the handle are to give a firm grip for the hands.[1]

Fig. 41 is a fanciful object "made solely for the market." The specimen measures 2.6 inches in length, and is made of an ivory head fitted into a handle of wood painted red. "The head was called a 'dog,' but it looks more like a bear. Small bits of wood are inlaid for the eyes, and the outline of the mouth is deeply incised and colored with red ocher, having bits of white ivory inlaid to represent the canine teeth.

[1]Ninth Annual Report Bureau of Ethnology, 1887–88. 1892, p. 306, fig. 386, *a* and *b*.

The ears, nostrils, vebrissæ, and hairs on the muzzle are indicated by blackened incisions. There is an ornamented collar round the neck, to which is joined a conventional pattern of triangular form on the throat and a somewhat similar pattern on the top of the head between the ears."

Ornamentation of utensils is carried on to an almost unlimited degree, and the simple nucleated circle occurs very frequently, in fact in preference, in some portions of Alaska, to the arrowhead and herringbone designs.

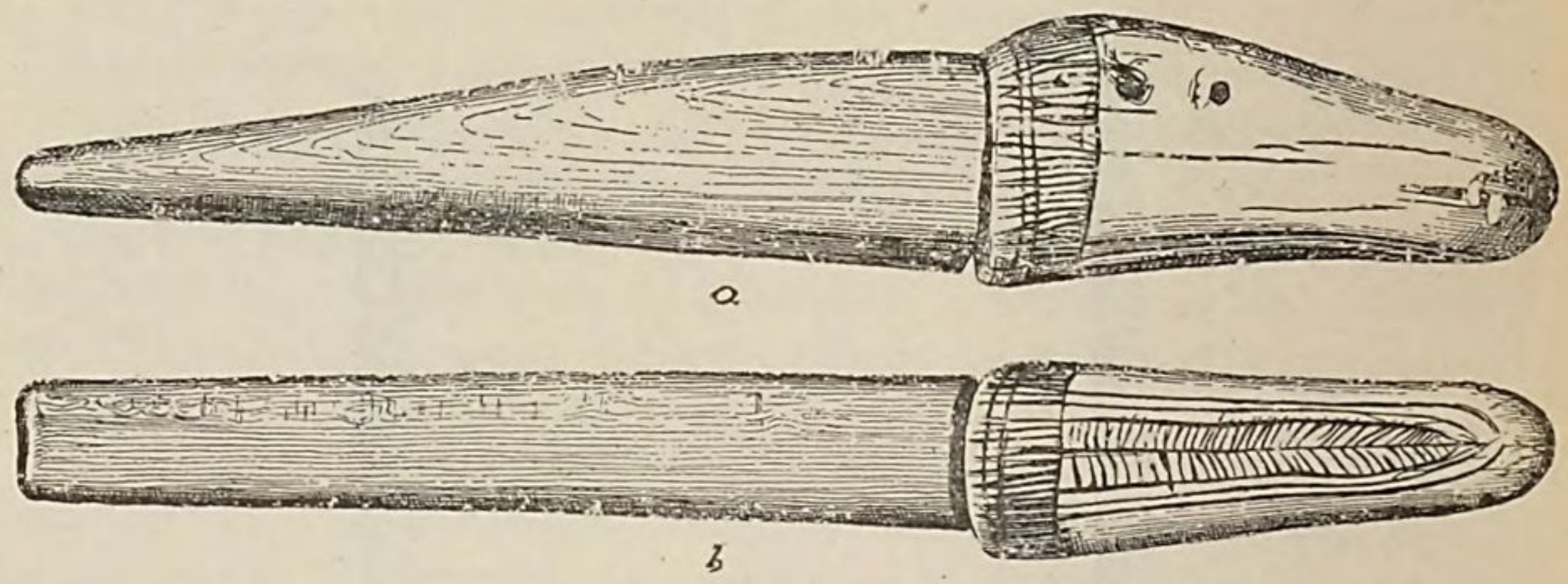


Fig. 41.

DECORATED IVORY CARVING.

Point Barrow.

From Point Barrow we have a twister for working the sinew backing on bows, upon one side of which is a row of conspicuous nucleated rings.[1] The specimen is of ivory, and measures 5.4 inches long. It is one of a pair, as two pieces constitute a set.

In fig. 43 is represented a good example of a native dipper made of fossil ivory. The decoration along the top of the straight flat handle and around the upper part of the outside of the bowl consists of nucleated circles. These were originally colored with red ocher, but are filled with dirt, while those upon the handle are, to a great extent, almost effaced by wear.

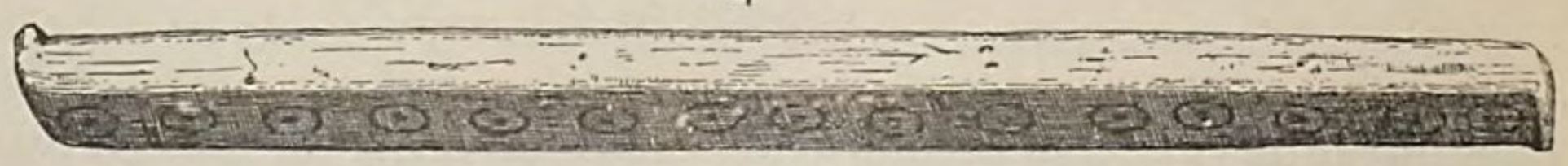


Fig. 42.

TWISTER FOR WORKING SINEW BACKING OF BOW.

Upon fig. 44, representing a knife with a handle made of reindeer antler, occur a number of lines of nucleated circles connected by short lines. The ornamentation extends horizontally along the top and sides, the incisions having originally been colored with red ocher, but at present contain more dirt than ocher.[2]

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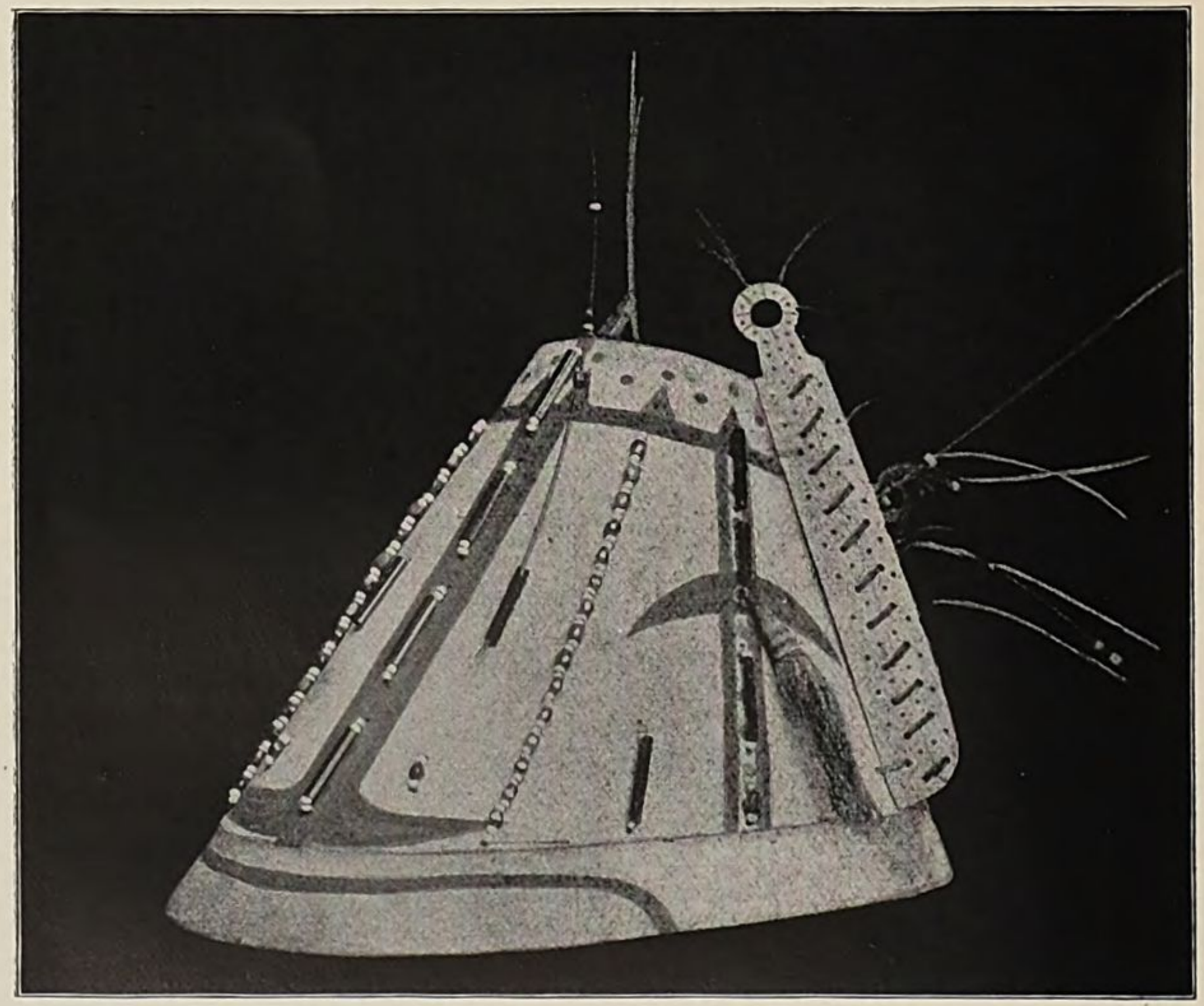
[1] Ninth Annual Report Bureau of Ethnology, 1887–88. 1892. p. 292, fig. 286.

[2] Idem, p. 173, figs. 113 and 114.



DECORATED HUNTING HAT. KATMAI ISLAND, ALASKA.

Another interesting specimen of workmanship, bearing ornamentation of the same character as the preceding, is shown in fig. 45, and consists of a chisel. The small blade has an oblique tip, not beveled to an edge, and is hafted in walrus ivory, yellow from age. The nucleated rings are colored with red ocher, and the two halves of the handle are fastened together by a stout wooden treenail and a stitch of whalebone.[1]

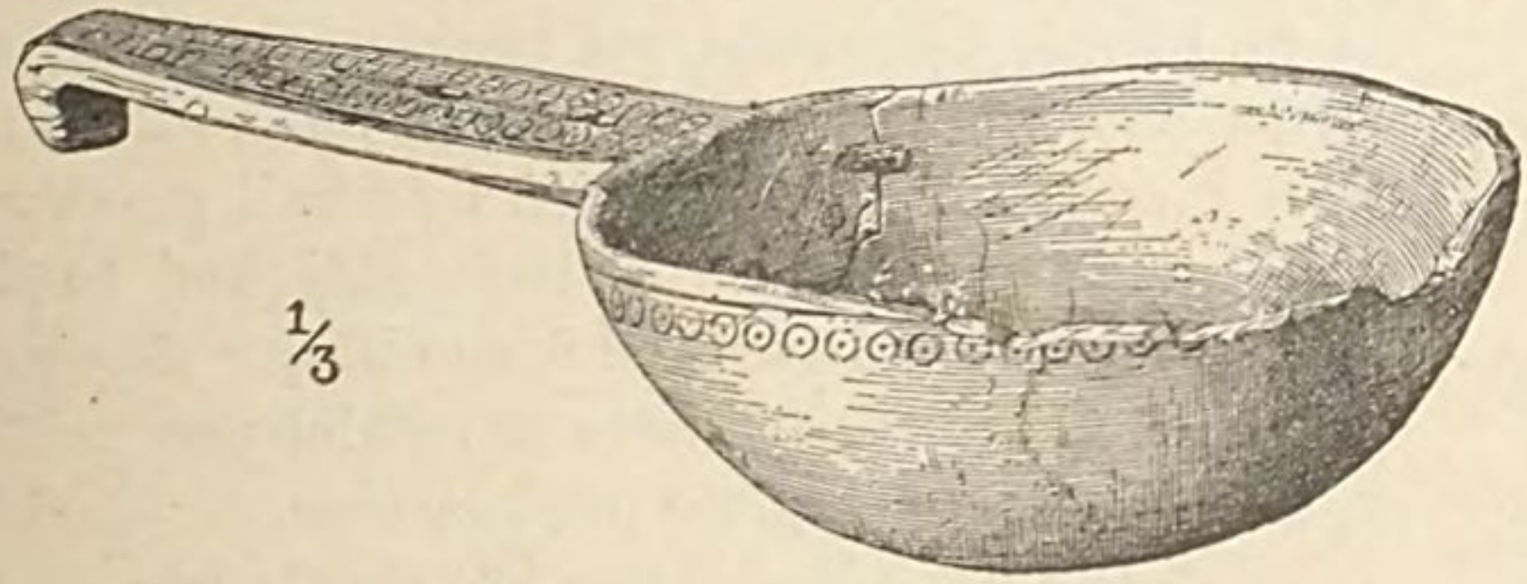


Fig. 43.

DIPPER OF FOSSIL IVORY.[2]

The accompanying illustration of the foreshaft of a seal dart, fig. 46, is given, reproduced from the report on the natives of Point Barrow.[3] The ornamentation is confined almost wholly to the nucleated circles, the only animate object portrayed being a deer. It is said that some of these shafts are highly ornamented, the figures being all incised and colored, some with ocher and some with soot.

The specimen shown on plate 53 represents a decorated hunting hat from Katmai Island, Cooks Inlet, Alaska, and was collected by Mr. W. J. Fisher.

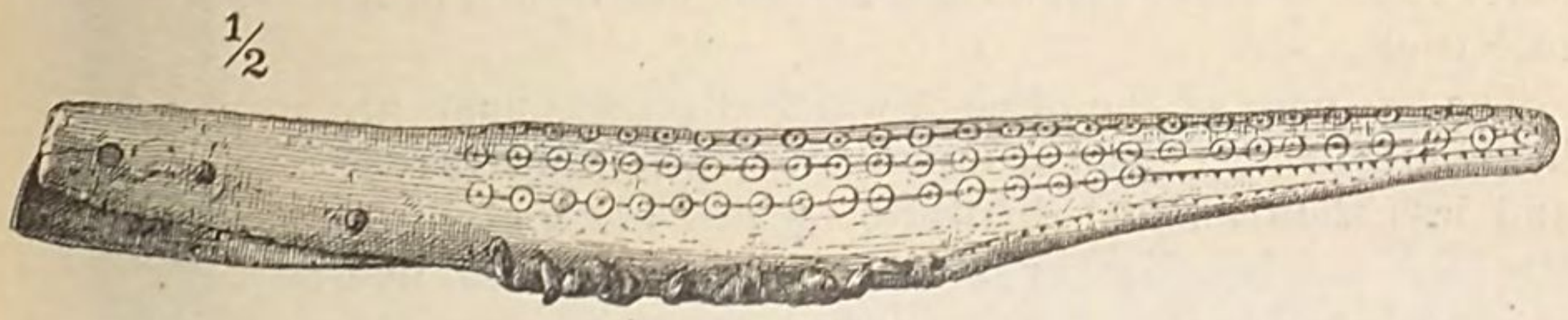


Fig. 44.

LARGE KNIFE WITH ORNAMENTED HANDLE.

This variety of head covering is common to the natives of the islands of Kadiak and those occupied by the Aleuts. This specimen is made of wood shaved down until the average thickness is only about one-fourth of an inch, while the height along the front, from the top to the bottom of the visor, is $9\frac{11}{16}$ inches. The color in chief is of white; the horizontal band about the bottom, flesh color; the remaining vertical stripes in front and about the top, and downward through the crescent-

[1] Ninth Annual Report Bureau of Ethnology, 1887–88. 1892; p. 173, figs. 113 and 114.
[2] Idem, fig. 42, p. 103.
[3] Idem, p. 217, fig. 204.

like figure, black. The interior spaces between the black lines just named are filled in with dark or dirty vermilion.

Beads of dark blue, black, and white constitute portions of the decorations, while the projecting lines denote the application of sea-lion bristles, over several of which beads have been slipped.

The chief purpose of here representing the specimen is to show the place of attaching the decorated bone ornaments illustrated on plate 52. The strips of bone are but one-eighth of an inch in thickness, yet there are a number of perforations along the top curve and outer edge, in which were inserted bristles secured by small wooden pegs.

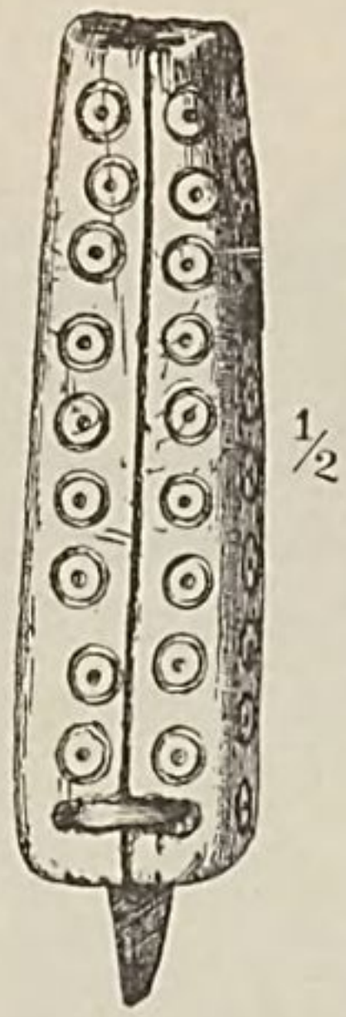


Fig. 45.

CHISEL, WITH DECORATED HANDLE.

The ornamental slab of bone attached to the right side of the hat is decorated with oblique grooves, about one-half an inch apart, between which are rows of dots or complete perforations.

Upon the left side of the hat the bone slab was split from near the top to the bottom, while the diagonal grooves were utilized to carry threads beneath the level of the outer surface to hold together the pieces from completely separating.

Upon the upper part of the back of the hat are two arrowheaded ornaments, each $1\frac{3}{4}$ inches in length and projecting at right angles from the wooden base, each being decorated with nucleated rings, those on the central rows of four each measuring three-sixteenths inch in diameter, while the outer rows of three rings each are but one-eighth of an inch each.

The two ends of the piece of which the hat is made are held together by means of a piece of wood $5\frac{1}{2}$ inches long and less than an inch in width, placed horizontally at the back and bearing perforations along the central line, through which a sea lion's whisker has been passed in imitation of stitching, thus securing the ends with a perfectness to almost resemble a continuous piece of wood.

Fig. 46.

SEAL DART.

The decorations vary according to the owner's skill and taste, and are used in canoe trips to protect the eyes from the glare of light and to permit more intent gazing for the marine animals sought.

In plate 54 are three examples of Eskimo bone carving, the outer ones being charms and ornaments for attachment to the hunting hats, an illustration of which, together with the method of attachment, is shown in plate 53.

The specimen at the left of the plate, as viewed by the reader, was collected by Mr. E. W. Nelson at Shaktolik. It is of bone, and is deco-

EXPLANATION OF PLATE 54.

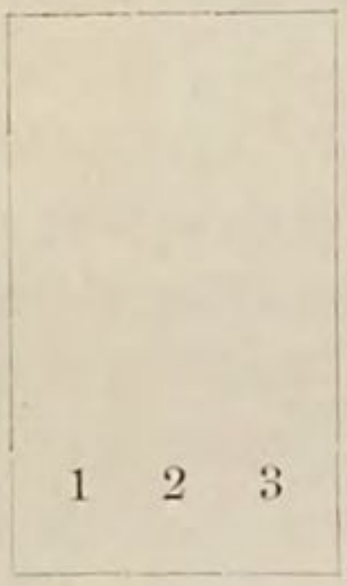
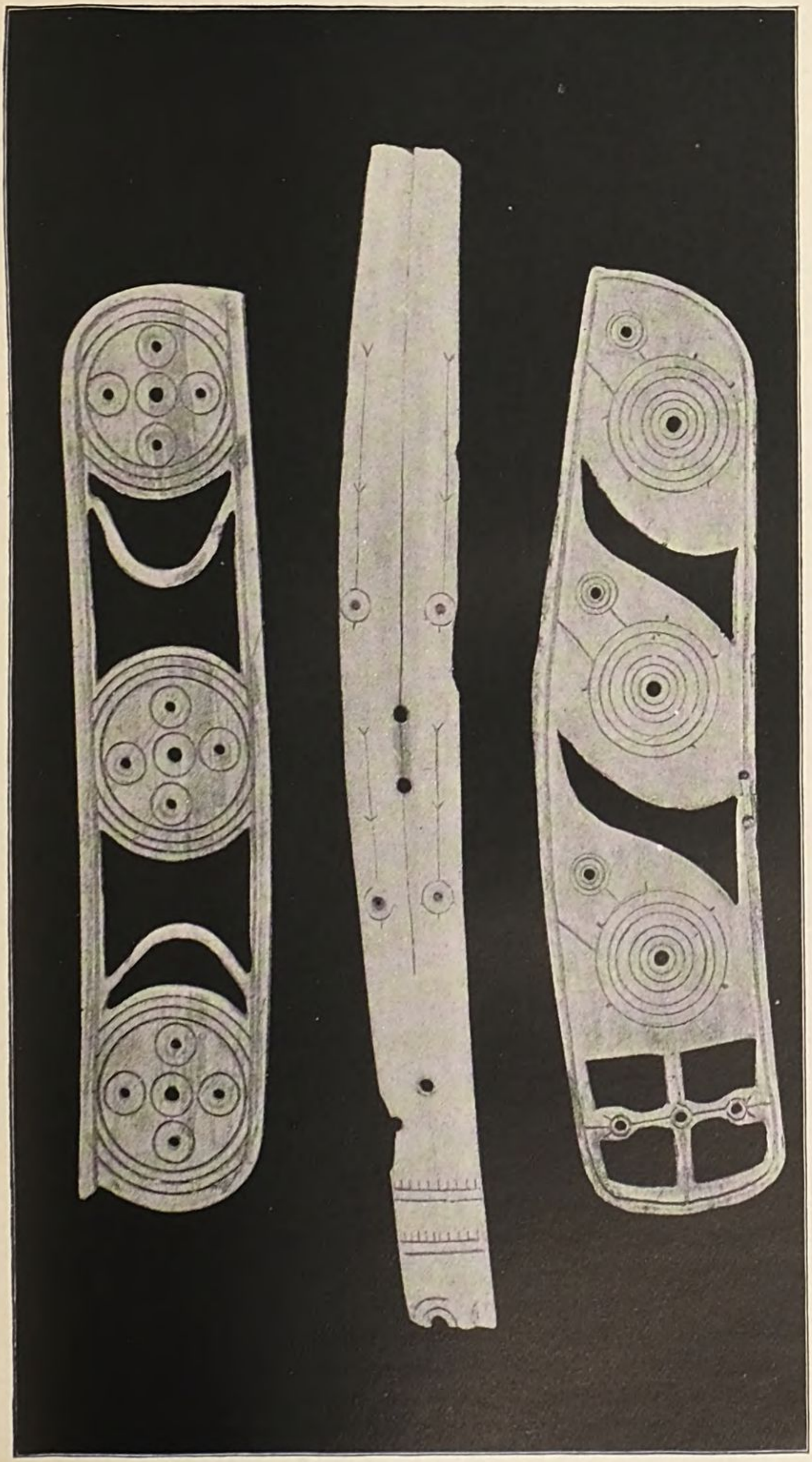


Fig. 1. HAT ORNAMENT.
(Cat. No. 24703, U. S. N. M. St. Michaels. Collected by L. M. Turner.)

Fig. 2. HAT ORNAMENT.
(Cat. No. 5604, U. S. N. M. Premorska, Yukon River. Collected by Thomas Dennison.)

Fig. 3. HAT ORNAMENT.
(Cat. No. 43808, U. S. N. M. Shaktolik. Collected by E. W. Nelson.)



HAT ORNAMENTS OF BONE.

rated with three round pieces connected above and below by permitting the original bone to remain intact while the intervening portions were removed. The disks are each ornamented with five nucleated circles, the central spots being perforations of uniform diameter. Among these rings are three incised lines, darkened by dirt.

The specimen at the right side of the plate is from St. Michaels, Norton Sound, and was collected by Mr. L. M. Turner. The specimen is also of bone, and the decorations are alike on either side. This also is a charm for use on hunting hats.

The specimen in the center of the plate is of thin strip of bone, to be used for a similar purpose as the two preceding in ornamenting hunting hats. The specimen is marked "National Museum, No. 5604, Premorska, Yukon River," and was collected by Thomas Dennison. The nucleated circles upon the specimen have running upward straight lines, bifurcated at the top in imitation of one variety of the tree symbol, while midway between the top and bottom are like projecting lines as at the top. At the lower extremity of the specimen is a simple form of decoration, consisting of a horizontal line from which short lines are projecting.

Plate 7 represents three forms of ivory arrow and spear straighteners from three different localities and bearing different forms of decoration. The specimen at the left side of the plate was collected by Mr. E. W. Nelson at Diomede Islands, a locality occupying a position midway between the American and Asiatic continents. It measures $8\frac{1}{8}$ inches in extreme length, $1\frac{3}{4}$ inches across the widest part, and has an average thickness of five-eighths of an inch. The perforation with which the weapons to be straightened are held is at an angle of almost 45 degrees, as compared with the plane of length of the piece.

The rear or convex part is plain, but upon the slightly concave front is an engraving of a reindeer. The lines seem to be partly filled in with dirt, the result of use, and not with black coloring matter placed there with intention to intensify the sketch.

The slight depression which appears lower down upon the handle is intended to be used in drilling, the top of the drill being held vertical by being inserted in the cavity, while the opposite end may be intended for drilling holes, or for fire making.

Another specimen is that at the right, also collected by Mr. Nelson, though at Cape Darby. This specimen, intended for similar service as the preceding, is shaped like the body of a deer with the doe's head at one end, while the eyes are two blue beads neatly inserted in holes. Like the preceding, some traces of hunting records are retained, the incisions in several places being almost obliterated by long-continued use. At one place a native is represented as directing a gun toward a reindeer, while in front of the latter are several lines indicating that another specimen of the same species was to be engraved, but not completed. Almost beneath the hunter is a rectangular figure, to one

end of which is attached a mammal, which, though relatively small, appears to represent a bear.

Upon the opposite side of the specimen, which is brownish yellow from age, are a number of delicate lines, some of which clearly portray habitations, a tree, two men, and a sledge with two dogs.

Along the back of the specimen, representing the spine of the animal imitated, are two parallel lines extending backward toward the lozenge-shaped perforation used for straightening weapons. The perforation, as in the preceding example, is also cut through at an angle, though only about 12 or 15 degrees variance from the line of the longest diameter. The entire length is $4\frac{3}{4}$ inches.

The middle specimen is from Nubriukhchuguluk, and was secured by Mr. Nelson. The form is greatly like that of a common steel carriage wrench. It is made of bone, and the four sides of the handle

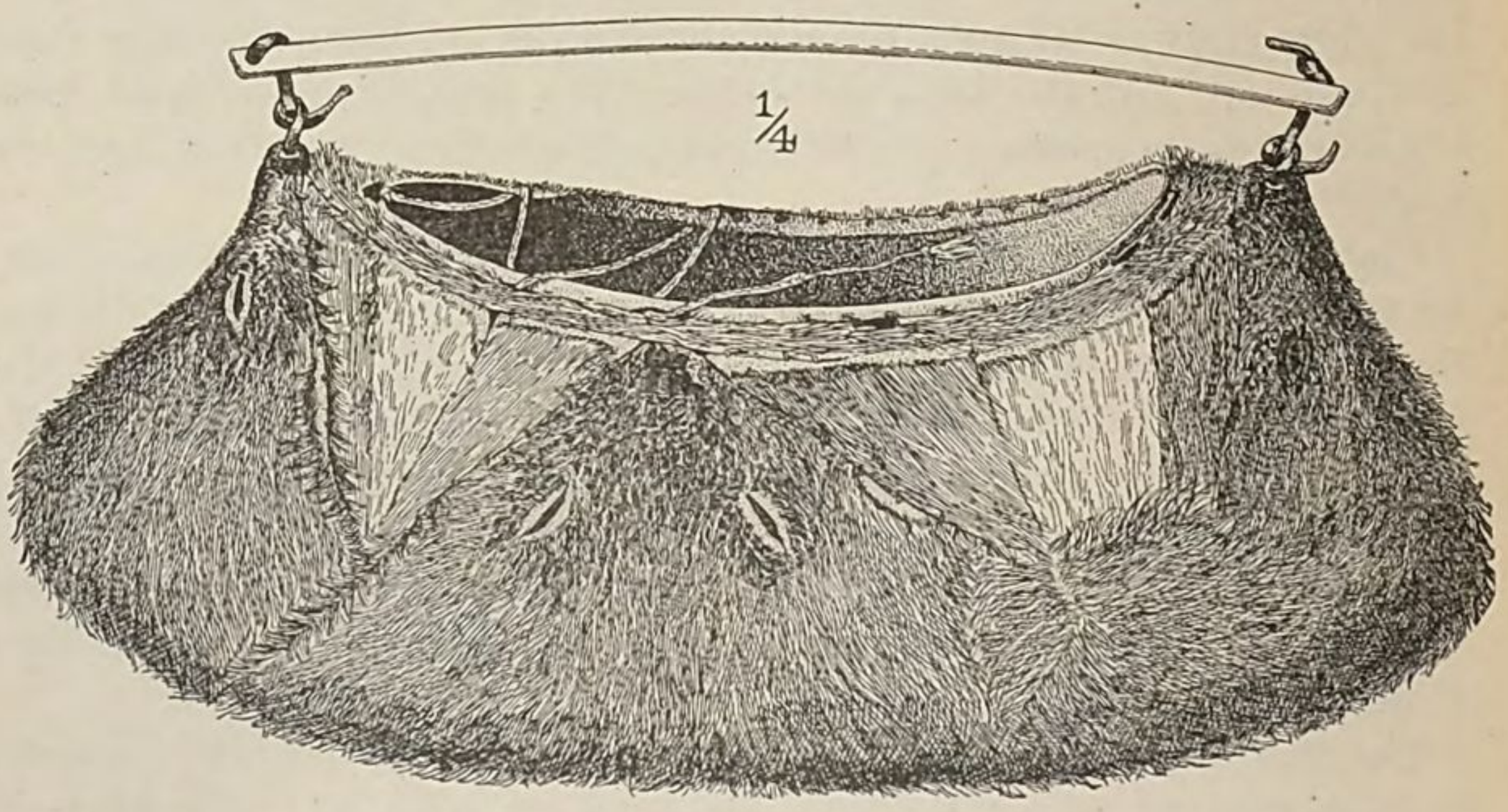


Fig. 47.

TOOL BAG OF WOLVERINE SKIN.

bear longitudinal lines with lateral cuts, so placed as to resemble arrowheaded or >-shaped figures. The type of decoration being one of the oldest and simplest, will be found more fully treated and illustrated in connection with the subject of decoration and conventionalizing.

The specimen is apparently a very old one, archæologically, and shows traces of long-continued or rough usage.

Plate 49, fig. 6, shows an ornament for attachment to the cap used by Aleut hunters, as is shown in plate 53. This specimen was obtained at Kushunuk. The ornamentation consists of very strongly incised concentric rings, to the outer one of which are attached two parallel lines extending diagonally toward the base line, possibly with the intention of filling the blank triangular space, which would otherwise remain without markings.

Many of the so-called drill bows in the collection of the National

Museum are, in reality, handles for carrying tool and other bags. The Point Barrow collection contains four such bags, and as Mr. Murdoch's description is short and to the point, I can not do better than to quote him. He says:

> These bags are always made of skin with the hair out, and the skins of wolverines' heads are the most desired for this purpose.[1] [Fig. 47.]
>
> The bottom of the bag is a piece of short-haired brown deerskin, with the hair out, pierced across the middle. The sides and ends are made of the skins of four wolverine heads, without the lower jaw, cut off at the nape and spread out and sewed together side by side with the hair outside and noses up. One head comes to each end of the bag and each side, and the spaces between the noses are filled out with gussets of deerskin and wolverine skin. A narrow strip of the latter is sewed round the mouth of the bag. The handle is of walrus ivory, 14½ inches long and about one-half inch square. There is a vertical hole through it one-half inch from each end, and at one end also a transverse hole between this and the tip. One end of the thong which fastens the handle to the bag is drawn through this hole and cut off close to the surface. The other end is brought over the handle and down through the vertical hole and made fast with two half stitches into a hole through the septum of the nose of the head at one end of the bag. The other end of the handle is fastened to the opposite nose in the same way, but the thong is secured in the hole by a simple knot in the end above. On one side of the handle is an unfinished incised pattern.

Many of these bag handles are decorated on two, three, or even all four sides, when they are so fashioned, although some are convex above, as well as below, leaving but two sides upon which to engrave anything.

Another variety of decorated handles are those used in small bags, meaning but one-quarter the size of the one above described.

In addition to the incised ornamentation, both decorative and historical or mythologic, many of the small bag handles are carved with whale flukes, bear heads, seal heads, and other objects, as will be found upon examining various illustrations in the present paper.

DECORATION OF ANIMAL CARVINGS.

As in the preceding methods of decorating ornaments, various animal carvings, effigies, toys, etc., are also ornamented, the artistic efforts being directed, in many instances, to heighten the resemblance to the prototype selected. Thus are attempted the indication of spots, stripes, and scales upon animals and fish, the results being often very clever.

Plate 53, fig. 1, shows a specimen which was obtained at Sledge Island. It is a very ornamental handle for packages or bags, to either end of which is attached a short chain. One of these chains terminates in a seal head. The links were cut from the same piece as the handle itself. The separate attachments to which the package is fastened consist of two small swivels, or pins, perforated below and terminating on top in carved seal heads, the ears, eyes, nostrils, and mouth of which are clearly indicated. The ornamentation upon the top of the handle consists of four small characters of the primary form of decoration

[1] Ninth Annual Report Bureau of Ethnology, 1887-88. 1892, pp. 187, 188, fig. 166.

previously referred to, and illustrated in plate 48, figs. 1 and 2, and plate 31, fig. 2.

Plate 55, fig. 2, is another kantag handle, and was obtained at Norton Sound. It is very old, measures $6\frac{1}{4}$ inches in length, and is ornamented upon the upper surface with two rows of seal heads in relief, each row consisting of fifteen heads, upon which are indicated the eyes. At either end are the relief figures of two whales flanking the perforations through which the cords are passed.

Plate 32, fig. 3, represents two ear pendants. Very quaint faces are inclosed by circles from which project four small circles or knobs with central indentations. The eyes, nose, and mouth very much resemble the face of a seal, the forehead being ornamented by small punctures. This closely resembles the carved ivory seal faces in fig. 6, in which the punctures are placed upon the cheeks to indicate the root of the whiskers. Above the eyes are markings to denote the eyebrows. In other respects the faces are very human. These faces resemble to some extent that shown in fig. 7, although it will be observed that in the latter the nostrils are very definitely outlined, while beneath the mouth are two pairs of descending lines to indicate tattoo marks.

Plate 56, fig. 2, represents an effigy of a seal. The concentric circles are ornamented on the outer side with three short radiating lines and a longer base line in exact imitation of the common flower symbol which it is undoubtedly intended to represent. The central perforations made by the central pin of the tool used in making the symbols are closed with wooden blocks which secure small bunches of bristles. Altogether the specimen is very artistically made.

Plate 56, fig. 3, shows a belt clasp. This represents a seal. Upon the side of the body is a large figure of concentric rings, to either side of which are three small sets. The central one is furthermore ornamented with four short radiating lines attached to the outer ring, while the small circles are decorated with short radiating lines, the upper one being represented by pairs, while the bottom line is represented by two lines; yet the figures appear to be the same as the conventional flower symbol, which may have been utilized in this instance to ornament the body of the animal, as in the preceding case.

Plate 26, fig. 3, represents a seal drag from St. Michaels. The thong is made of rawhide, and the instrument is used for dragging dead seals. It is made of walrus ivory, and represents two seal heads, the eyes and nostrils being clearly indicated, not only by perforations, but in one case the perforations are filled with wooden pegs, and the other the eyes are filled with beads. Upon the throat of each seal is the effigy of a whale, very neatly carved, and partly detached to add to its relief. The perforation extends through the mouth of the seal at the right hand, for the admission of a noose or cord. Upon the upper surface of the drag concentric rings are seen.

Plate 56, fig. 4, represents the effigy of a seal, and was made to be

EXPLANATION OF PLATE 55.

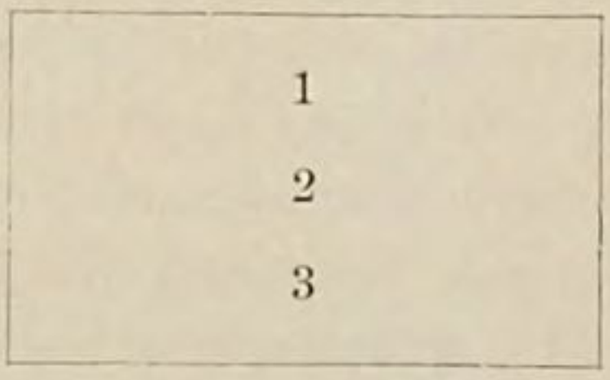
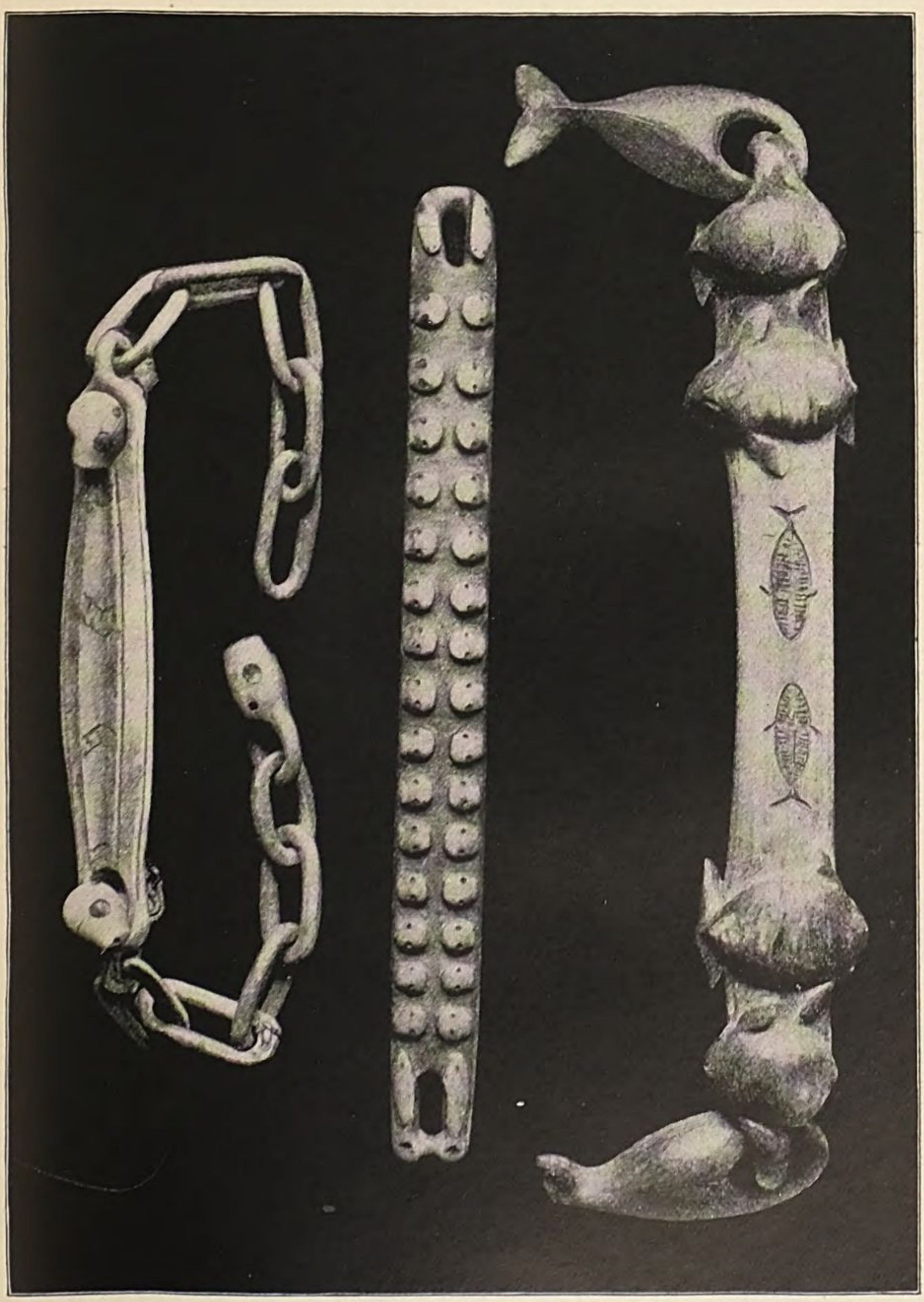


Fig. 1. BAG HANDLE WITH CHAIN ENDS.
(Cat. No. 44691, U. S. N. M. Sledge Island. Collected by E. W. Nelson.)

Fig. 2. KANTAG HANDLE.
(Cat. No. 24431, U. S. N. M. Norton Sound. Collected by L. M. Turner.)

Fig. 3. KANTAG HANDLE.
(Cat. No. 44690, U. S. N. M. Sledge Island. Collected by E. W. Nelson.)



ORNAMENTED BAG HANDLES.

EXPLANATION OF PLATE 56.

Fig. 1. EFFIGY OF OTTER.
(Cat. No. 36477, U. S. N. M. Kushkunuk. Collected by E. W. Nelson.)

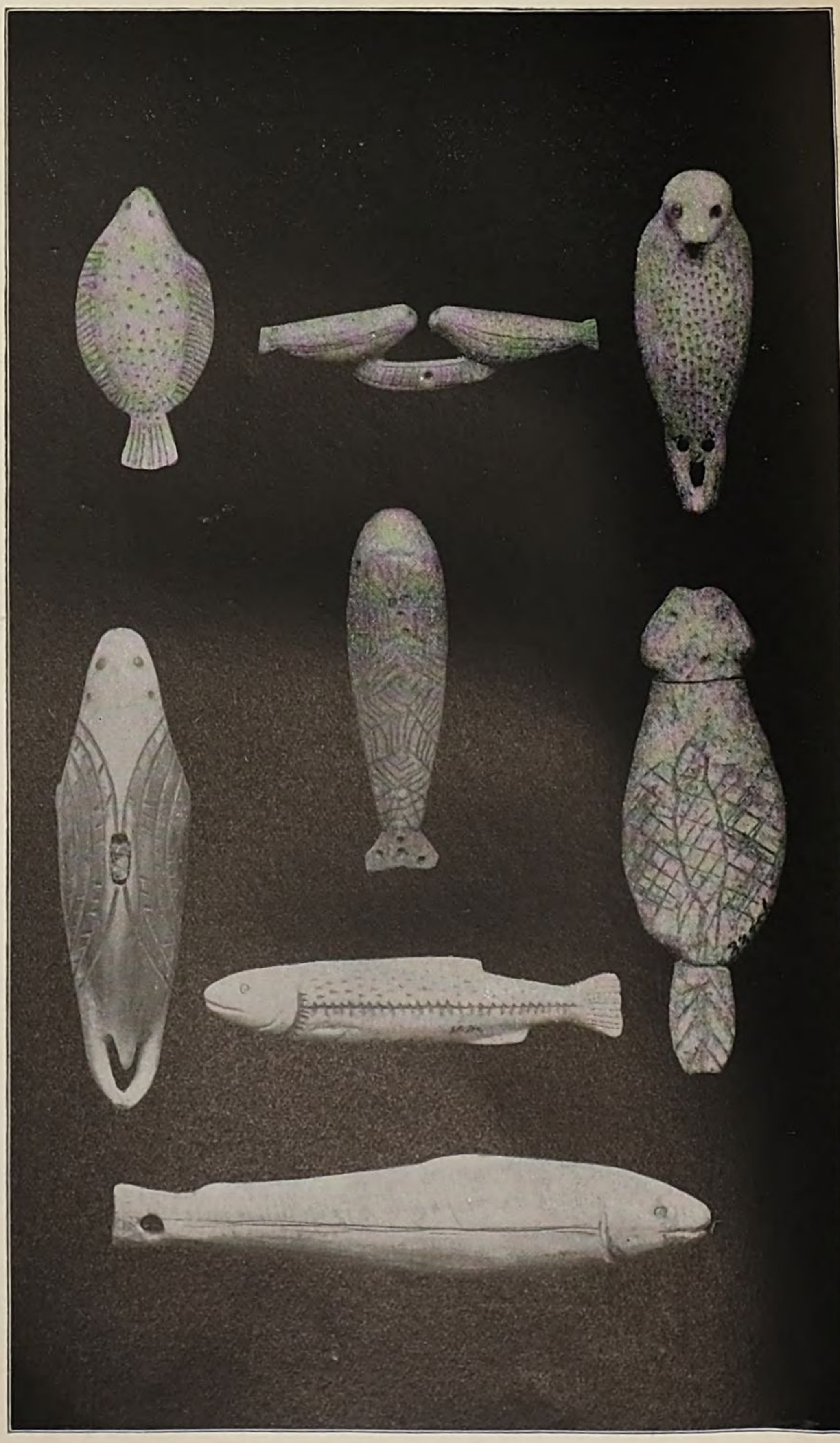
Fig. 2. EFFIGY OF SEAL.
(Cat. No. 55909, U. S. N. M. Briston Bay. Collected by E. L. McKay.)

Fig. 3. EFFIGY OF OTTER.
(Cat. No. 16140, U. S. N. M. Minivak Island. Collected by W. H. Dall.)

Fig. 4. EFFIGY OF SEAL.
(Cat. No. 48642, U. S. N. M. Kotzebue Sound.)

Fig. 5. EFFIGY OF WALRUS.
(Cat. No. 72904, U. S. N. M. Nashagak. Collected by E. L. McKay.)

ORNAMENTED ANIMAL EFFIGIES.



DECORATED ANIMAL FORMS.

EXPLANATION OF PLATE 57.

Fig. 1. Effigy of Flounder.
(Cat. No. 43786, U. S. N. M. Unalakleet. Collected by E. W. Nelson.)

Fig. 2. Carved Figures of Seals.
(Cat. No. 35900, U. S. N. M. Aleutian Islands. Collected by L. M. Turner.)

Fig. 3. Effigy of Seal.
(Cat. No. 37610, U. S. N. M. Unalakleet. Collected by E. W. Nelson.)

Fig. 4. Drag Handle in Imitation of Seal.
(Cat. No. 33292, U. S. N. M. Norton Sound. Collected by E. W. Nelson.)

Fig. 5. Beluga.
(Cat. No. 33373, U. S. N. M. Norton Sound. Collected by E. W. Nelson.)

Fig. 6. Beaver.
(Cat. No. 33356, U. S. N. M. Norton Sound. Collected by E. W. Nelson.)

Fig. 7. Grayling.
(Cat. No. 33535, U. S. N. M. Norton Sound. Collected by E. W. Nelson.)

Fig. 8. Fish.
(Cat. No. 33535, U. S. N. M. Point Barrow. Collected by Lieut. P. H. Ray, U. S. A.)

used for attaching cord and for dragging seals. The ornamentation consists of sharply marked nucleated circles. The specimen is from Kotzebue Sound, and is considerably ruder and less artistic than the other specimens in this series.

In plate 56, fig. 5, is reproduced the effigy of a walrus. The specimen was obtained at Nashagak by Mr. E. L. McKay. As in figs. 2 and 3, the body is ornamented with concentric rings, to the outer of each of which are radiating lines, almost like the conventional flower symbol, and possibly intended for the same. Extending horizontally between these "circle markings" are rows of small perforations, or drilled holes, simply to serve as ornaments. The peculiar marking upon the top of the head, which no doubt is intended to represent the wrinkles or folds of the skin, is also the rude symbol of the female genitals as drawn by the Eskimo, and of which one single instance is found in the collections of the National Museum, and is reproduced in fig. 48.

Plate 41, fig. 1, is an ivory wedge used for splitting walrus hide. The tool is made in imitation of an otter, the back and eyes having incised nucleated rings, with radii, which are connected by lines. The back bears, within the parallel space, some herringbone patterns similar to those on the figures shown on the same plate (41), figs. 3 and 4.

Fig. 48.

ETCHING OF PUDENDUM.

Plate 54, fig. 1, represents a carving of an otter. The article served as an ornament, but for what special purpose is not known. As will be noted by reference to the illustration, the back from the neck to the base of the tail bears a deep incision, through which were made several perforations for attaching it by means of cords to some other object. Within the concentric circles are blue glass beads which have been inserted in the perforations left by the tool used in making the rings. The eyes are also provided with small glass beads. All the lines and markings have been filled in with some black coloring matter.

Plate 57, fig. 6, represents a beaver, upon whose back is the outline of a smaller beaver. Over the whole are ornamental lines crossing one another at right angles.

Comparison may be made with an effigy of a seal, upon whose back, transversely and in relief, is a young one; both parent and young being decorated, the former with concentric rings.

Plate 26, fig. 2, represents a bag handle from the Lower Yukon. The specimen is almost semicircular, and measures 9 inches across from point to point, and 4 inches in height. The upper or convex side has high relief carvings representing bears' heads, nine in number, the eyes and nostrils being pronounced perforations, while upon the forehead of each is a sharply defined cross. Along the upper edge, corresponding to the necks of the bears, are the deeply cut figures of six bears, and continued around to the inside of the handle, and connected with the necks of three of the bears, are the figures of trees.

Immediately below the bears' heads are the figures of seventeen seals, to the back of each of which is a diagonal line to represent a harpoon, while transversely to the latter is shown the cord. These resemble a general attempt at ornamentation, the uniformity of drawing appearing to substantiate this belief.

Plate 57 represents a number of figures of animals and fish, all of them toys, with the exception of fig. 4, which is a drag handle. Fig. 1 represents a flounder, and is ornamented with delicate incisions and radiating lines for fins. Fig. 2 shows an ivory carving representing seals and ornamented with delicate punctures and incised lines. Fig. 3 is an effigy of a seal with the head portion plain while the back is ornamented with triangular marks as if made with single incisions of a three-cornered graver. Fig. 4, already referred to, represents a seal, the ornamentation consisting of curved parallel lines within which are short diagonal lines extending from each parallel line toward the other.

Plate 57, fig. 5, represents the beluga, with very rude markings upon the back.

The Kantag or bag handle shown in plate 58, fig. 3, is in imitation of a beluga whale, while the back of the neck also bears a rude outline of such a mammal. The shoulder bears a transverse bar within which is a meandering line extending from side to side of the animal; behind this are the figures of four "killer" whales, while near the rear end of the figure itself is the upper part of a bowhead whale shown with water spouting.

Plate 55, fig. 3, represents a kantag handle from Sledge Island. The decoration consists of figures of four right whales carved transversely, two at either end. From the ends of the handle are suspended, in the shape of links, other whales, while upon the middle of the handle are engraved delicate outlines of two whales facing each other.

Plate 41, fig. 6, represents a bodkin, the point consisting of part of a three-cornered file while the other end terminates in a short chain. The last link represents a fish tail and is ornamented with nucleated circles, while the handle of the instrument bears a series of nucleated rings with short radiating lines, representing the flower symbol, as in plate 15, fig. 4, though larger.

Plate 57, fig. 7, represents a grayling, though in reality the shape and pronounced decoration of the upper half of the body represents more nearly the salmon. It will be noticed that the median line is ornamented with other lateral incisions in imitation of the "fish trap" pattern, while the fins are very pronounced and consist of sharply marked serrations, resembling one-half of the preceding pattern.

Plate 57, fig. 8, represents a fish, the dorsal markings consisting of hatched lines. This probably represents a salmon.

EXPLANATION OF PLATE 58.

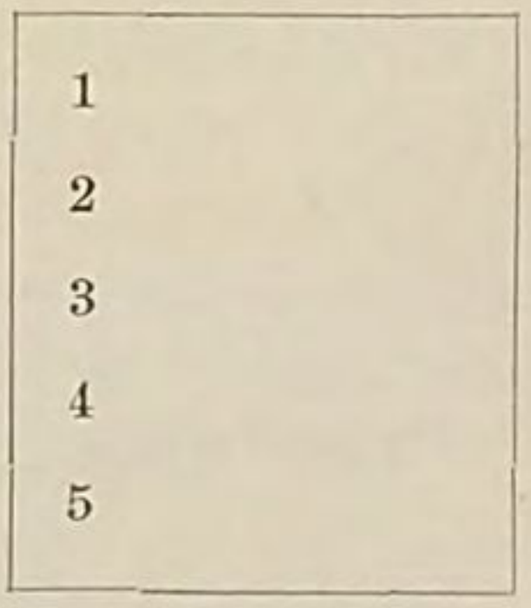


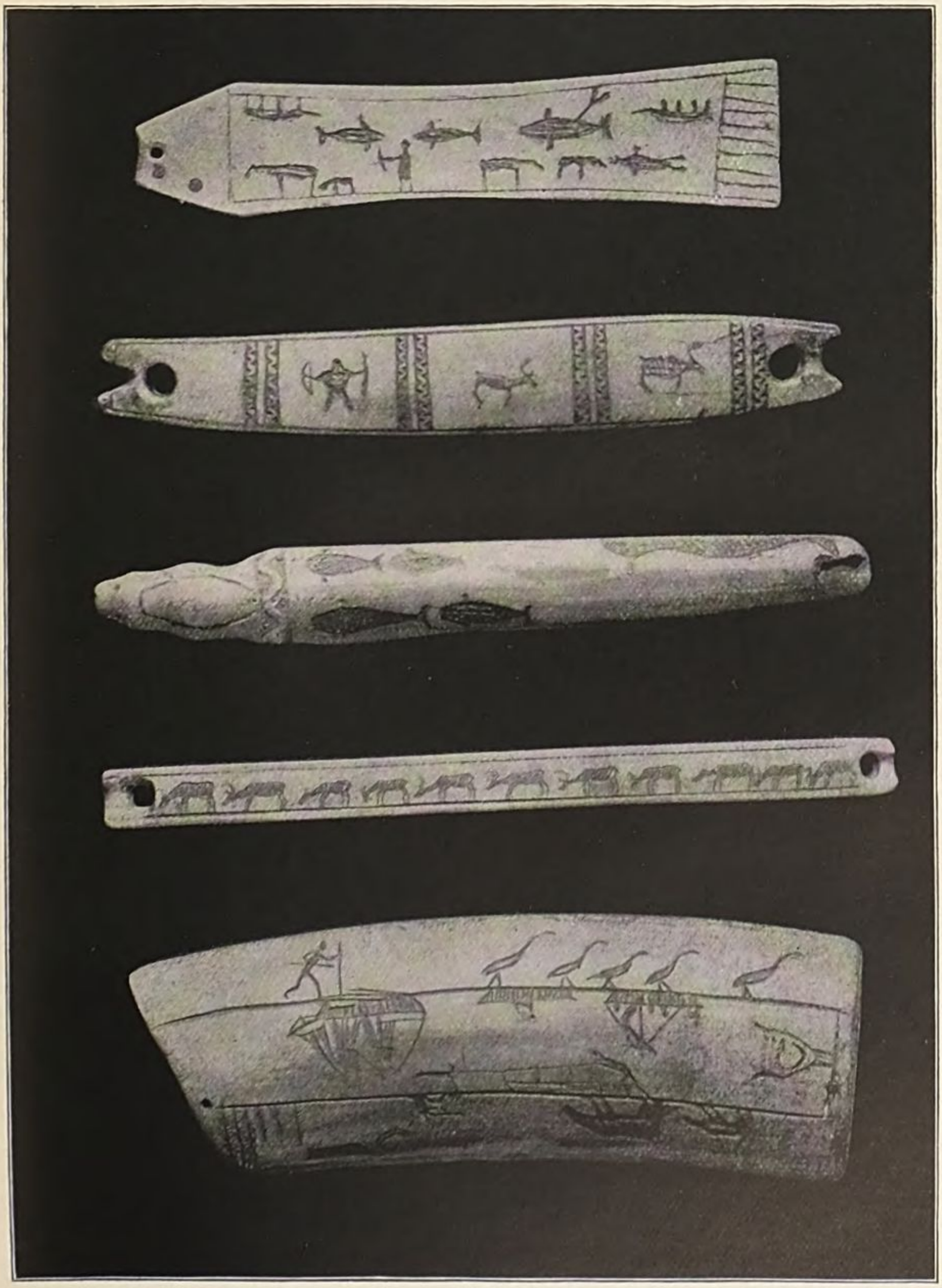
Fig. 1. HUNTING RECORD.
(Cat. No. 89487, U. S. N. M. Point Barrow. Collected by Lieut. P. H. Ray, U. S. A.)

Fig. 2. KANTAG HANDLE.
(Cat. No. 43936, U. S. N. M. "Nubuiakhchugaluk." Collected by E. W. Nelson.)

Fig. 3. KANTAG HANDLE.
(Cat. No. 43820, U. S. N. M. Unalakleet. Collected by E. W. Nelson.)

Fig. 4. KANTAG HANDLE.
(Cat. No. 24429, U. S. N. M. St. Michaels. Collected by L. M. Turner.)

Fig. 5. BONE BOX.
(Cat. No. 129221, U. S. N. M. St. Michaels. Collected by L. M. Turner.)



DECORATED UTENSILS.

PICTOGRAPHS OF DOMESTIC AVOCATIONS.

The greater number of the records appear to come under this general caption, together with which some hunting scenes are included. The various forms of habitations used by the Eskimo are also here referred to, rather than in the previous chapters in connection with the geographic location and environment of the several subtribes or settlements, because comparisons may here be made between the forms or outlines of houses, sledges, and possibly also canoes, to show the degree of fidelity of reproduction of specific peculiarities of either of the last named.

HABITATIONS AND CONVEYANCE.

In his reference to the dwellings of the Eskimo generally, Mr. Petroff[1] speaks of the winter and summer habitations as being quite distinct from one another. The former being underground to a certain extent, having a mound-shaped appearance with a ridge projecting for some distance, beneath which is the entrance, is closely imitated in the pictographs by the natives. The smoke holes are in the top of the dome, or near the center, for the escape of the smoke. The common houses, on the other hand, are inclosed above ground, and partake of the nature of a log structure covered with skins, and sometimes of an ordinary tent-shaped shelter. The fire is built not within the tent, but before the entrance. This feature is also carefully observed in the etchings made by the native artist, and numerous examples are given in illustration thereof.

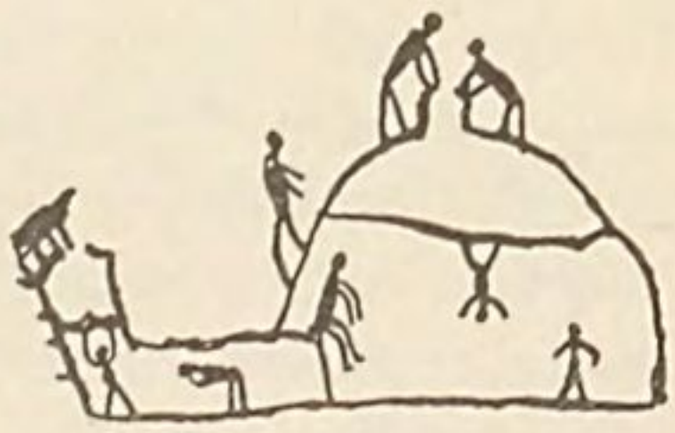


Fig. 49.

DWELLING FROM CHUCKCHE YEAR RECORD.

A larger building, known as the kashqa, is found in almost every village, built after the pattern of the winter habitation. A raised platform runs all around the interior for seating the visitors, and on some of the larger kashqas several such tiers have been observed. These structures are generally used for ceremonial observances. An illustration of the ground plan of such an inclosure, made by a native, is reproduced in fig. 49.

In fig. 49 is the outline of a dwelling reproduced from plate 81, which constitutes a Chuckche "year record." The original was obtained by Baron Nordenskiöld in Siberia, and is now in the possession of a gentleman in England. The pictographs were drawn upon a piece of walrus hide.

In the interior, at the left, is shown the ridge intended for seats or sleeping places. The occupant seated upon it appears to be gesticulating and in conversation with his companions.

A similar drawing in fig. 50 shows this seat also. This sketch is

[1] Tenth Census of the United States, VIII, p.128.

from a pipe from Norton Sound. A drummer occupies the seat, while his companions are dancing.

On the outside is shown one man at work chopping wood, while two of his companions are indicated as bringing in a piece of timber for splitting.

Fig. 50.

WINTER HABITATION, WITH WOOD CHOPPER AT WORK.

This structure is al most a counterpart of the specimen on the Chuckche chart from Siberia.

In fig. 51 are represented two forms, almost identical, of structures made for white men, to serve as trading establishments as well as sleeping quarters. The outline in some pictographs of traders possesses one more nearly like a one-story log house.

On one of the ivory bodkins shown in plate 24, fig. 5, the triangular figures with diagonal projecting lines on either side near the top are outlines of summer habitations, the utilization of which for apparently purely decorative purposes being probably prompted by the regular and angular forms, straight lines being preferable and more desirable for such ornamental engraving, as curved lines are foreign to the primitive straight-line system, largely attributable to the kind of instruments available and the generally difficult nature of the substance to be worked or engraved.

In plate 59, fig. 4, is another and ruder form of indicating the same style of summer habitation, the variants in plate 59, fig. 2, being also more explanatory in detail, and of interest as indicating a departure in engraving from the original type of a tent shelter, the light lines diverging from near the top denoting the poles, over which some skins or imported fabrics have been thrown.

In plate 60 are a number of illustrations of native pursuits. In the fifth line, or No. 5, are shown some delicately engraved figures.

Nos. 1, 3, 5, 7, 9, 10, and 12 represent habitations of several kinds, of each of which the village is composed. The occupant at the entrance to No. 1 is employed in suspending from a pole—to the left of the house No. 3—some meat, probably fish. Festoons of the same kind of food, for the purpose of drying, are suspended from the food racks shown in Nos. 4, 6, and 8 and on the horizontal pole resting on the roofs of the two houses at Nos. 9 and 10. A granary is also indicated in No. 8, the stairway beneath being plainly shown. The occupants of the houses Nos. 9 and 10 are also occupied with domestic duties. Fig. 11 represents the boat, placed upon a rack so as to dry the skin covering.

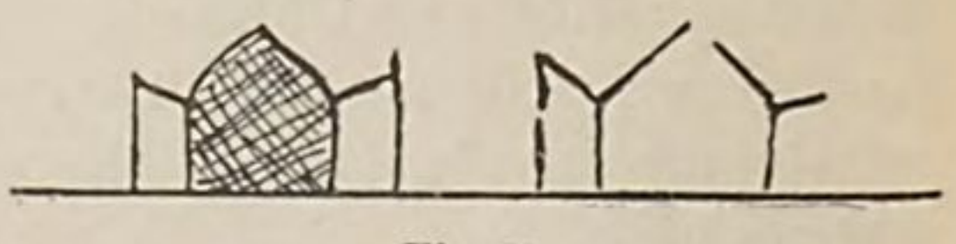


Fig. 51.

WHITE MEN'S DWELLINGS.

The summer habitation (No. 12) has an open door at one side, and to

EXPLANATION OF PLATE 59.

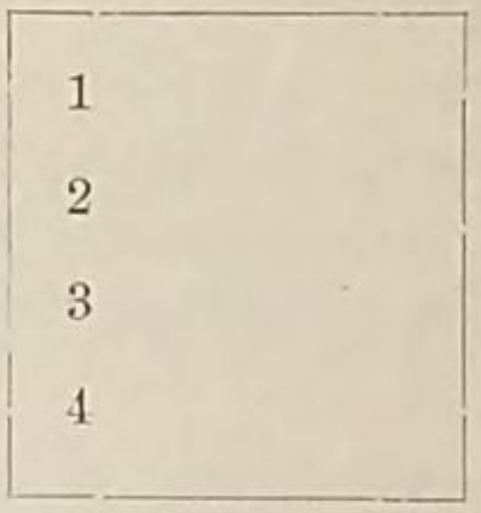
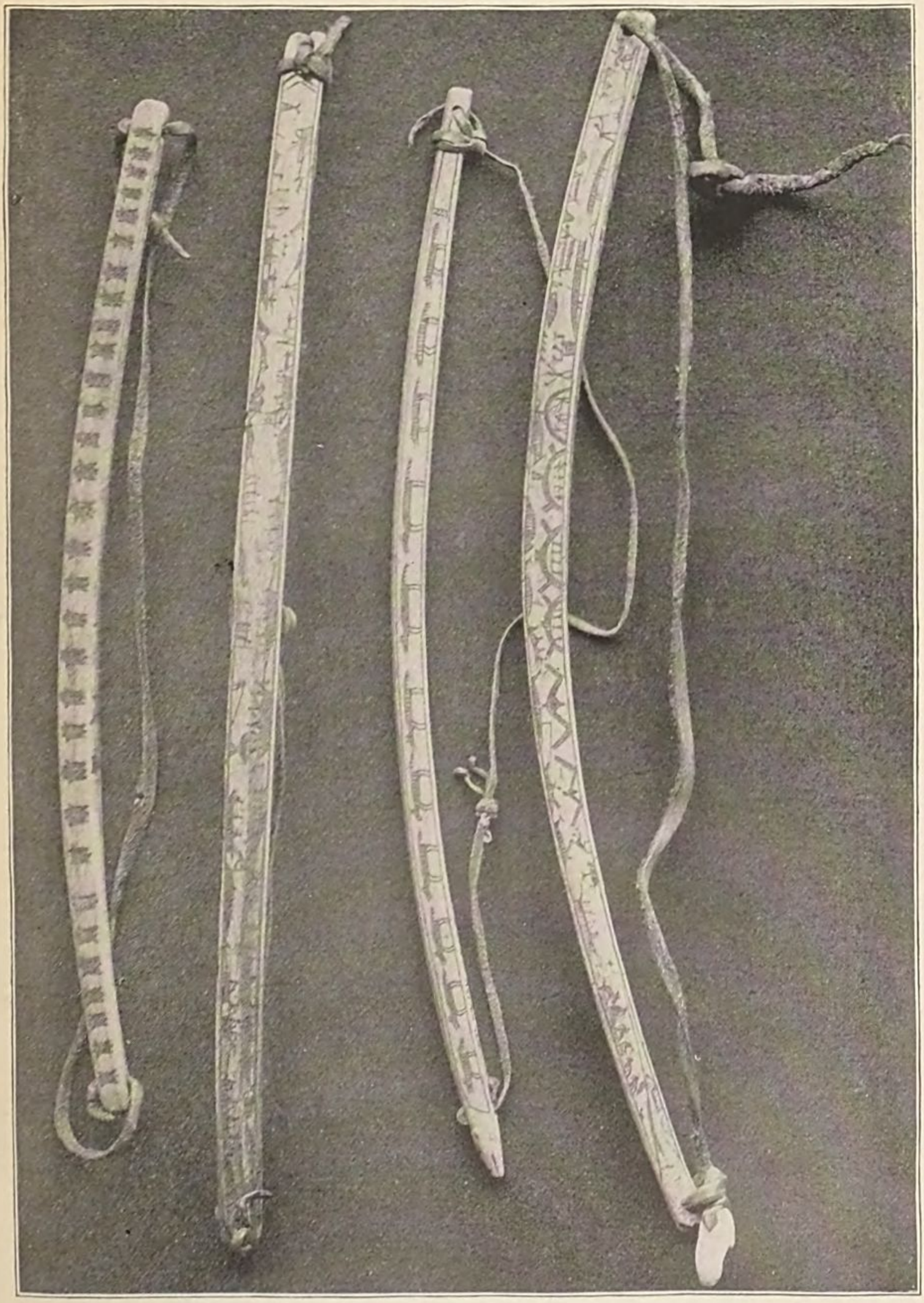


Fig. 1. DRILL BOW.
(Cat. No. 43930, U. S. N. M. Nubriakh. Collected by E. W. Nelson.)

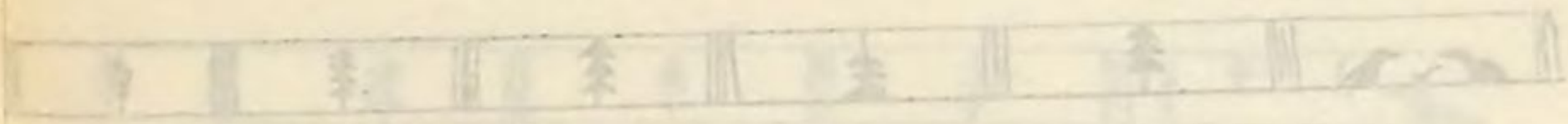
Fig. 2. DRILL BOW.
(Cat. No. 43360, U. S. N. M. Cape Prince of Wales. Collected by E. W. Nelson.)

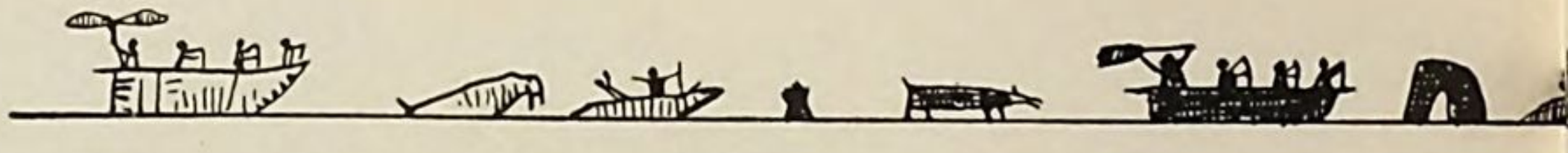
Fig. 3. DRILL BOW.
(Cat. No. 33186, U. S. N. M. Norton Sound. Collected by E. W. Nelson.)

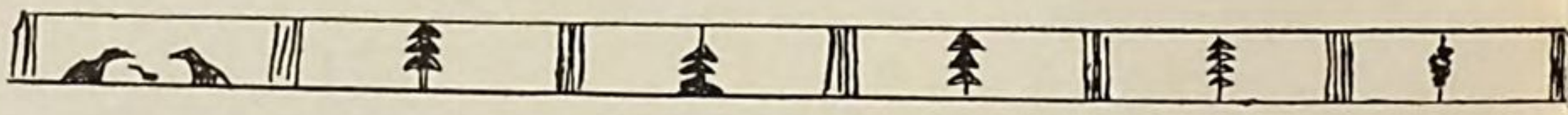
Fig. 4. DRILL BOW.
(Cat. No. 33187, U. S. N. M. Norton Sound. Collected by E. W. Nelson.)

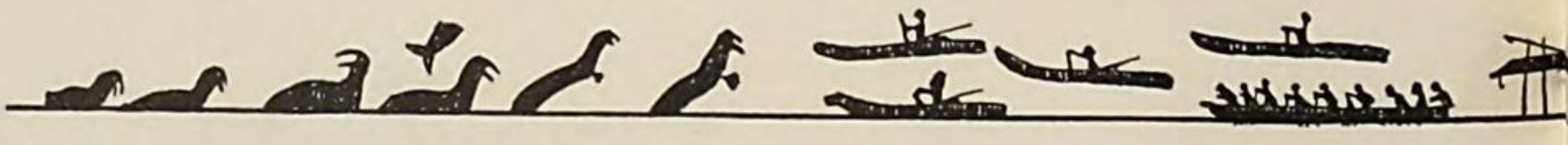


RECORDS ON DRILL BOWS.









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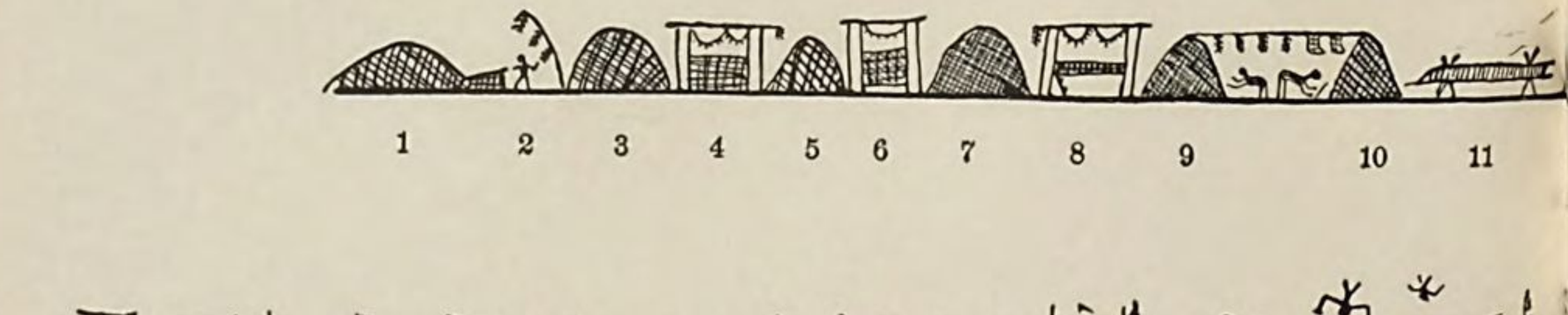

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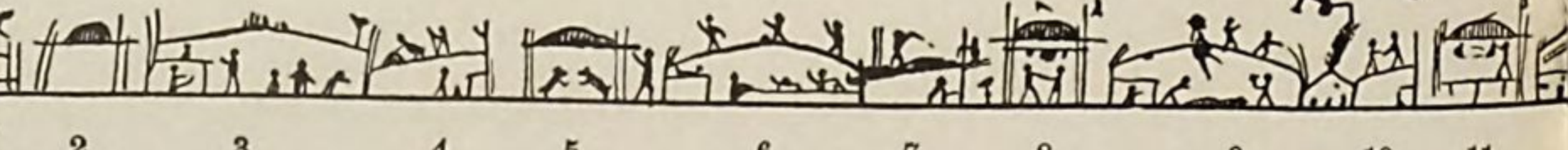

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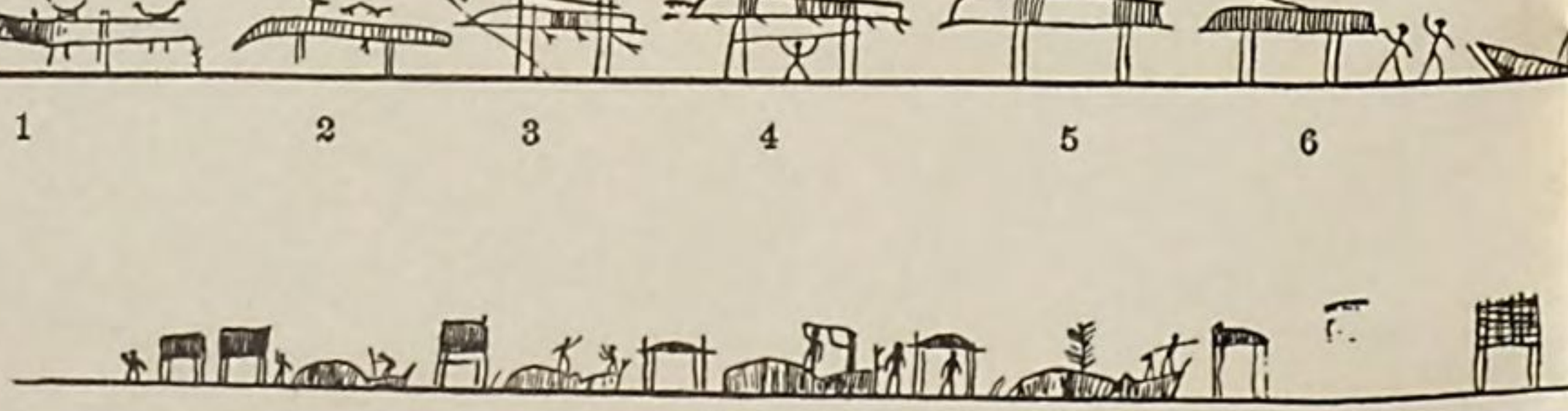

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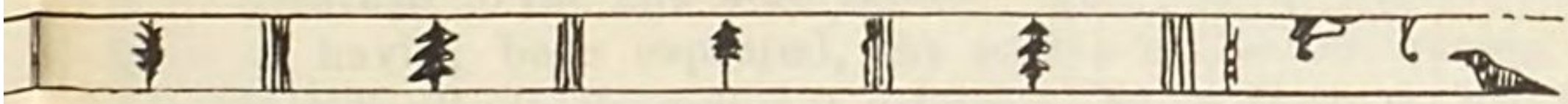

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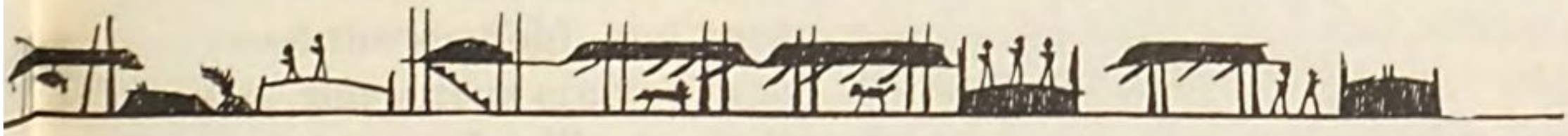

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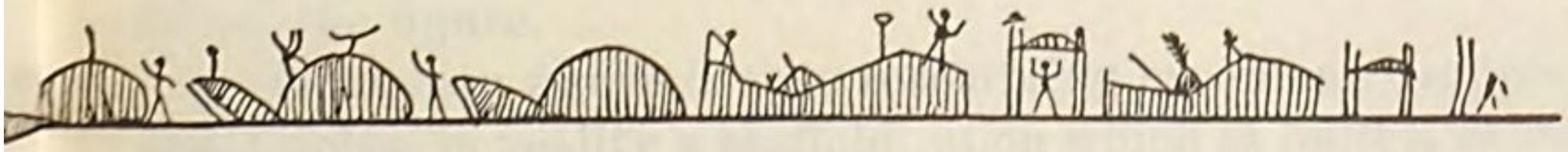

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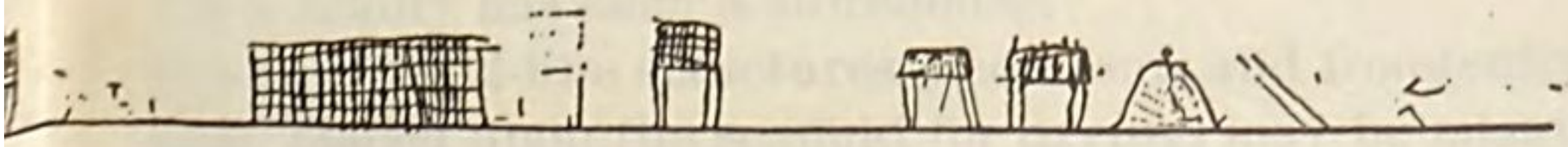

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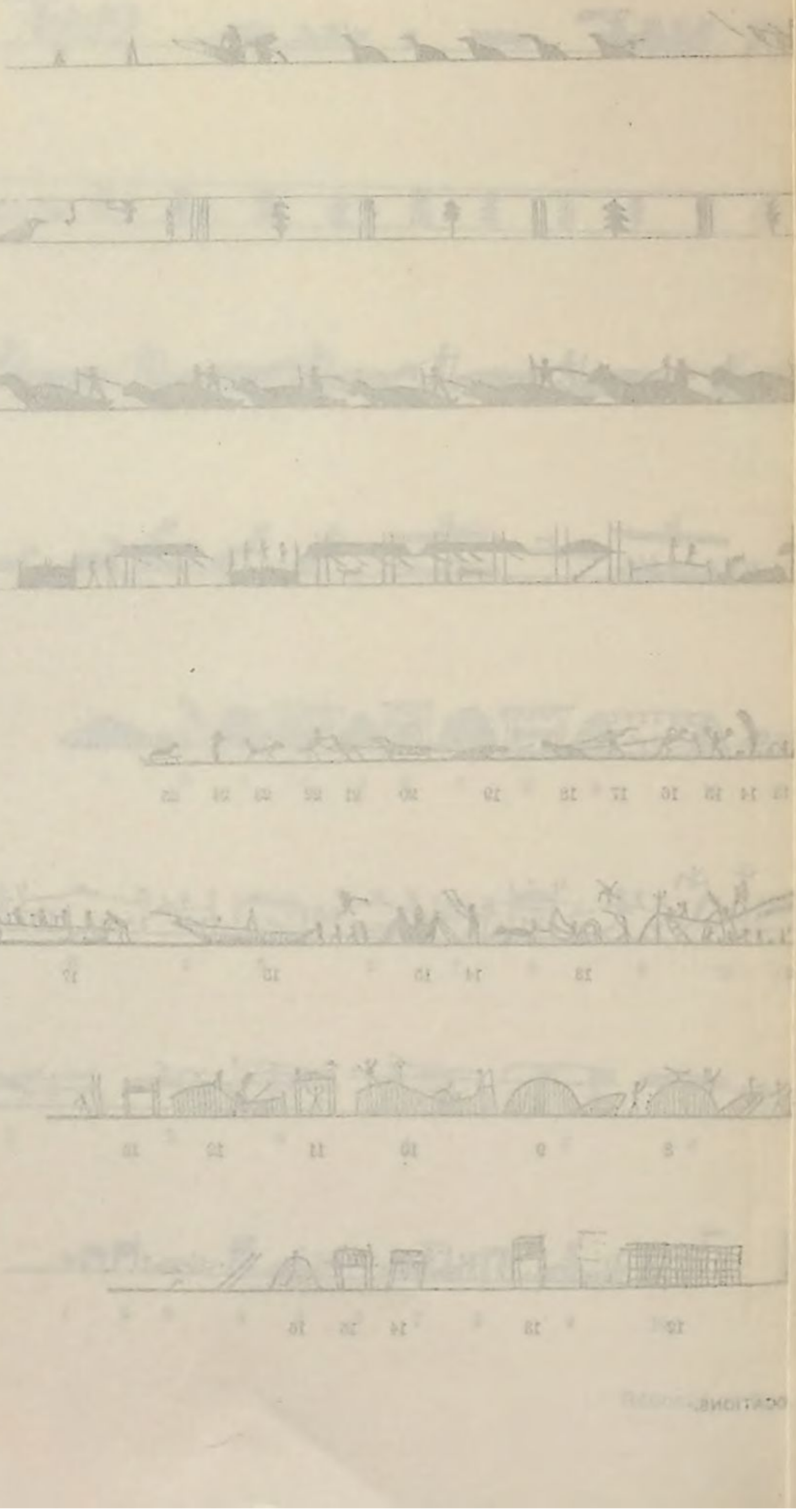

the right is seated one of the household (No. 13) employed in stirring some food in a kettle. The smoke (No. 14) is rising to a considerable height, and another pot or kettle is seen to the right. The native shown in No. 15 is greatly excited, having both hands, with extended fingers, thrown upward, the cause being seen in an old man dragging ashore a walrus, which is being harpooned by No. 17. The old age of the native (No. 16) is indicated by his walking with a staff, this method of portraying an old person being common in many portions of the world, the Egyptian hieroglyphs abounding in characters almost identical to the one here shown. The walrus (No. 19) is also shown as having been captured, the native in No. 21 having considerable difficulty in dragging it ashore, as he is down on one knee tugging at the harpoon line, while a companion is observed near him (No. 22), aiding him.

Fig. 20 is the outline of a doe, which was also secured. No. 23 denotes a dog, while Nos. 24 and 25 indicate two other natives.

An excellent illustration of the different methods of portraying canoes and houses is given in plate 60, seventh line, the whole scene denoting a native village situated near the water. Upon the canoe (No. 21) is a "shaman stick," or votive offering, erected to the memory of the one who owned the scaffold, and perhaps canoe as well. Another offering of similar purport is erected upon the roof of the house No. 10. One showing the same fan-like top will be found in connection with mortuary customs.

At No. 4 the native is putting away something resembling a pole, while at No. 6 the two men seem to be engaged in conversation concerning the canoe, the one nearest to it having his right hand pointing toward or touching it.

The winter habitations, with their entrances, are portrayed in a manner different from the usual custom. The entrance is very projecting, and apparently overhanging.

Smoke is seen issuing from the apex, chimney, or funnel containing a smoke hole, on the house No. 12. A food scaffold, known by the vertical poles projecting considerably above the transverse body, is shown in No. 13, while beyond is what appears to be another scaffold. The erosion to which the ivory has been subjected has obliterated all other parts of the figure.

A very common figure is that resembling an oblong box placed upon upright poles, in reality a scaffold, upon which is built a storehouse for the protection against noxious animals. These figures are usually placed near the representation of the dome-shaped winter habitation, as each family has such a storehouse.

Other scaffold-like structures also occur, and frequently the kaiak or umiak, placed upon the scaffold for drying, may be mistaken for one of these, which, in reality, are the resting place of some human body. This practice is not common everywhere, however.

In some ethnographic "Memoranda concerning the arctic Eskimos in Alaska and Siberia," by Mr. John W. Kelly,[1] an interpreter, says:

The Eskimo oomeaks (open boats) have a framework of spruce covered with split walrus hides, sea-lion skins, or white grampus skins. The latter is not used if sea-lion or walrus skins are obtainable, as it is rather thin. The Bering Strait and north-coast boats are generally 24 feet long with 5 feet beam, and have a carrying capacity of 15 persons and 500 pounds of freight.

Those of the Kotzebue Sound average about 35 feet in length and 6 feet in width. They have a carrying capacity of 20 persons and 1,000 pounds of freight, or 3,000 pounds of merchandise and a crew of 6 men. There are exceptional boats built on the sound that are as much as 42 feet over all. In crossing Kotzebue Sound or Bering Strait the natives sew on bulwarks of sea-lion skins a foot high to keep the water from dashing in.

Mr. Ivan Petroff,[2] who spent a number of years in various portions of Alaska, in an official capacity, says of the vessels of the Eskimo:

All the Eskimo tribes, without exception, manufacture and use the skin canoe known as the kaiak, identical with that of the eastern or Greenland Eskimo; and this feature is so distinctive and exclusive that a tribal name might justly be based upon it should the necessity arise for another. At present I know of only one instance where an intermixture of the Innuit with another tribe has taken place

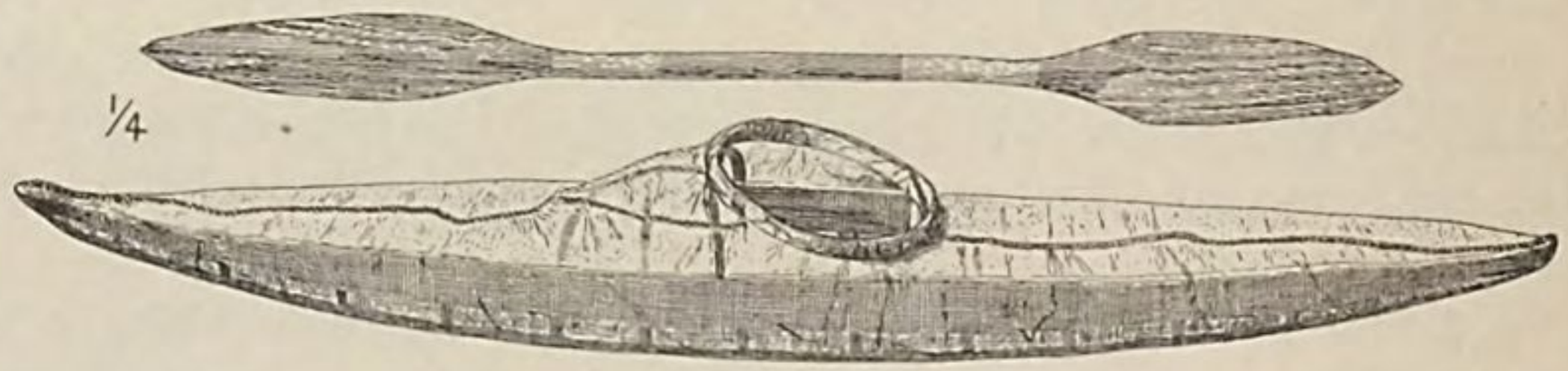

Fig. 52.

MODEL KAIAK AND DOUBLE PADDLE, POINT BARROW.

under such circumstances that the foreign element has gained the upper hand, and there they have already abandoned the manufacture of the kaiak and apparently forgotten the art of its construction. I refer to the Oughalakhmute, who have mixed with the Thlinket. The open skin boat, the *oomiak*, or woman's boat, also known as *bidar*, is used by certain tribes on the north coast of Asia; but the kaiak proper is only found among the Eskimo.

When the Russians first observed this craft, they applied to it the name of bidarka, a diminutive of bidar, a Kamchatkan term for an open skin boat. This term is now used throughout Alaska wherever Russian influence once predominated, and the same word has been incorporated into several Eskimo dialects in the form of *bidali*, which is, however, applied only to two and three hatch kaiaks—a variety formerly known only on the Aleutian Islands, and adopted by the Russians for greater convenience in hunting and traveling. From Bristol Bay westward and northward the kaiak and oomiak only are used.

The accompanying illustration serves to show the general form of the kaiak, so often figured by the natives in their hunting record.[3]

Although fig. 52 is from the most northern portion of Alaska, the generic type of construction is practically the same among all the

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[1] Bureau of Education, Circular of Information No. 2, 1890, Washington, 1890, p. 27.
[2] Tenth Census of the United States, VIII, 1884 (Alaska, etc.), pp. 124, 125.
[3] Ninth Annual Report Bureau of Ethnology, 1887–88. 1892, fig. 341, p. 224.

Eskimo. The double paddle is so often used in portraying signals on ivory that its representation here will be of interest in showing how accurately the native artist portrays even the tapering form of the blades.

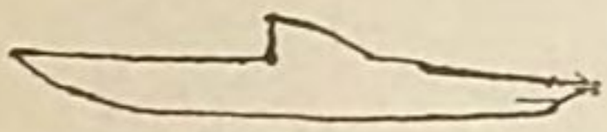


Fig. 53.
KAIAK.

Fig. 54.
KAIAKS.

On plate 27 is shown an illustration of a native kaiak model.

Several forms of the native portrayal of kaiaks are shown in figs. 53 and 54. The first is a simple outline and incomplete, and an occupant was evidently intended to be portrayed, as all the remaining portion of the record from which it was selected was complete in every detail. The two illustrations in fig. 54 are less accurate in outline, the latter being a simple group of scratches.

The specimen shown in fig. 55 is very accurately drawn, the harpoon and seal float being shown upon the kaiak immediately behind the hunters.

The representation of large boats used for traveling, hunting, and fishing, for the propulsion of which boat oars and sails may be used, is of such frequent occurrence in the records of the Eskimo, that a reference to the vessel and its actual appearance is deemed appropriate.

Fig. 55.
KAIAK.

This large skin-covered open boat is in general use by the natives of Greenland and Alaska, as well as by the Aleuts and some Siberian tribes. The vessel is designated as the umiak, by the Point Barrow natives, and some of the Aigaluxamiut, of the southern coast, have used this name as well as the term baidarka.

Fig. 56 represents a model of an umiak from Utkiavwiñ, U. S. N. M., No. 56563,[1] and seems to illustrate the general form so closely followed in the engravings by native artists. The natives sit with the face toward the bow, using the paddle and not an oar. The women are

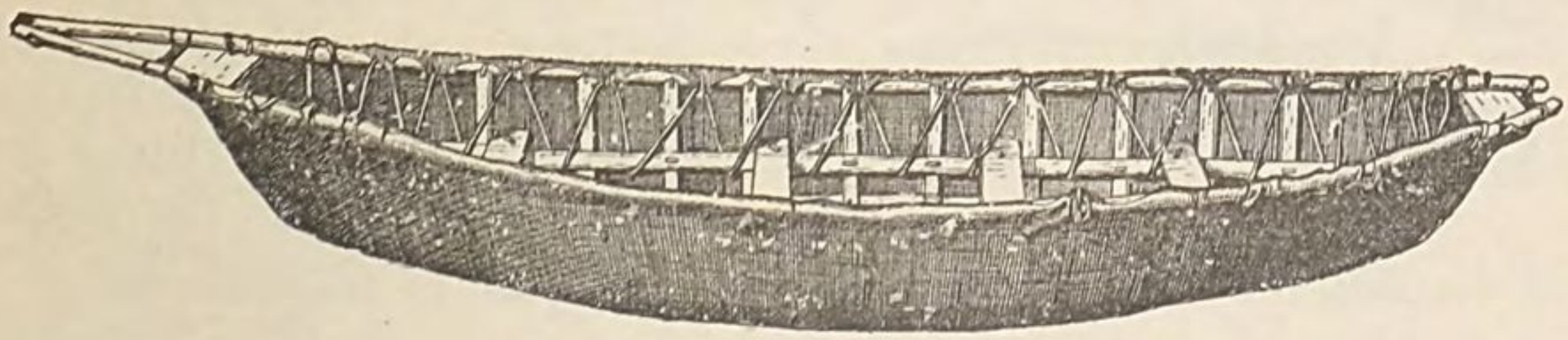


Fig. 56.
MODEL OF UMIAK.

said by Egede, in his "Greenland" (p. 111), to sit with the face toward the stern, "rowing with long oars." Mr. Murdoch[2] remarks with reference to this that "though the women do a great share of the work of

[1] From the Ninth Annual Report Bureau of Ethnology, 1887–88, 1892, fig. 345[a], p. 340.
[2] Idem, p. 335.

navigating the boat when a single family or a small party is making a journey, it is by no means considered a woman's boat, as appears to be the case among the Greenlanders and the eastern Eskimo generally. On the contrary, women are not admitted into the regularly organized whaling crews, unless the umialik can not procure men enough, and in the 'scratch' crews assembled for walrus hunting or sealing there are usually at least as many men as women, and the men work as hard as the women."

Fig. 57.
UMIAK.

This is mentioned to explain the reason why the female figure is absent in records of hunting and fishing trips, although present in other scenes, such as domestic and probably ceremonial records.

Plate 28 represents an illustration of a native model from Alaska.

A native drawing of the umiak with four hunters is shown in fig. 57. The lines are heavily incised, and blackened. The men are without paddles, which may have been an oversight on the part of the artist. The spear or harpoon rest is also shown, as well as the weapon itself.

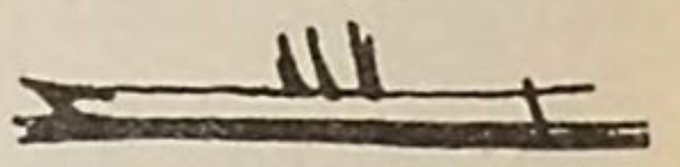


Fig. 58.
UMIAK.

A less carefully drawn illustration of an umiak is shown in fig. 58. The three occupants are without paddles. Still ruder form is shown in fig. 59, where an attempt at throwing a harpoon at a whale is also shown.

In fig. 60 is reproduced a still ruder drawing of an umiak, no hunter being shown, yet the record in which this vessel occurs is of a class, or in that condition of completeness, that should also have present the occupant.

A better illustration of an umiak, containing five people, is shown in fig. 61. The lines are lightly incised.

A neatly executed sketch of an umiak is illustrated in fig. 62. The bow is longer than usual, and also projects from the water.

Fig. 59.
UMIAK PURSUING WHALE.

Two varieties of sledges are portrayed in pictographs made by the Eskimo, one of them being the railed sledge (fig. 63), used for carrying loads of articles belonging to camp equipage, etc., while the other pertains to a low flat sledge, without rails (fig. 64),[1] and used for carrying bulky objects, such as game, frozen seals, and, as Mr. Murdoch informs us, for transporting the umiak across the land or solid ice. Both are made without nails, the different parts being mortised together and lashed securely with stitches of thong and whalebone.

[1] Ninth Annual Report of Bureau of Ethnology, 1887–88, 1892, p. 353.

The runners are made to slide easily by fitting to them shoes of clear ice as long as the runners themselves, "fully 1 foot high by 6 inches thick. The sledge, with these ice runners, is estimated to weigh, even when unloaded, upward of 200 or 300 pounds; but it appears that the smoothness of running more than counterbalances the extra weight."[1]

The flat sledge is used also for ordinary travel as well as freight, and an illustration of one with ivory runners is shown in fig. 65.

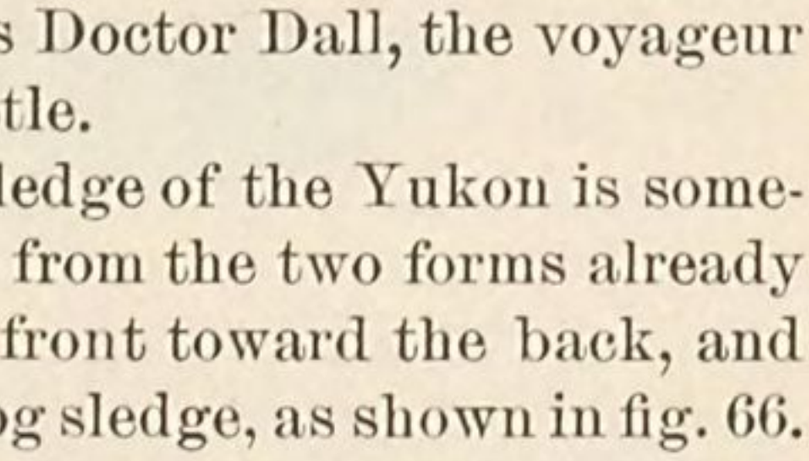


Fig. 60.
UMIAK.

The difference between these varieties are often very neatly portrayed, as well as other accessories pertaining thereto.

Doctor Dall furnishes several illustrations of sledges,[2] one from Norton Sound being like the railed sledge of Point Barrow. Some difference, however, is apparent, and this may naturally influence the portrayal of the vehicle in engravings on ivory. The same author also furnishes the illustration of a Hudson Bay sledge in which the runners are absent, the entire base consisting of birch boards, three of which are laid side by side and secured, and about 12 feet long. These are cut thin at one end and turned over like a toboggan, held down with rawhide, and inside the curve, says Doctor Dall, the voyageur carries his kettle.

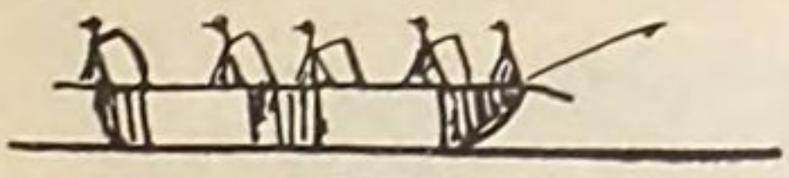


Fig. 61.
UMIAK.

The railed sledge of the Yukon is somewhat different from the two forms already mentioned, the upper rail rising from the front toward the back, and resembling very much a native sketch of a dog sledge, as shown in fig. 66. The hunter seems to be seated upon the sledge, seeming to indicate that he has no other loads and that the rear projection on the sledge is the high framework shown in the Yukon type.

In fig. 67 is a native reproduction of a dog sledge made somewhat after the type of the Point Barrow type, though no such drawings have been found in Point Barrow records. The men are both energetically working to aid the dog in moving the sledge, which seems loaded. The dog is well portrayed, the ragged outline no doubt being intended to denote the shaggy coat of hair.

Fig. 62.
UMIAK.

In his reference to the Eskimo of Melville Peninsula, Captain Parry says:[3]

> The distance to which these people extend their inland immigrations and the extent of coast of which they possess a personal knowledge are really very remarkable. Of these we could at the time of our first intercourse form no correct judgment, from our uncertainty as to the length of what they call a seenik (sleep), or one day's

[1] Ninth Annual Report of Bureau of Ethnology, 1887–88, 1892, p. 354.
[2] Alaska and its Resources, Boston. 1870, p. 421.
[3] Journal of a Voyage, etc., etc., London: 1821, p. 165.

journey, by which alone they could describe to us, with the help of their imperfect arithmetic, the distance from one place to another. But our subsequent knowledge of the coast has cleared up much of this difficulty, affording the means of applying to their hydrographical sketches a tolerably accurate scale for those parts which we have not hitherto visited.

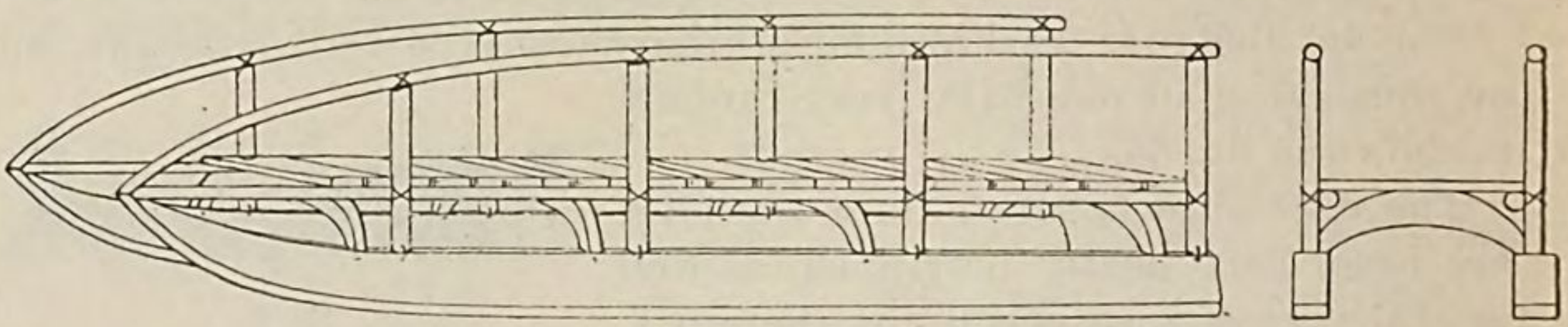


Fig. 63.

RAILED SLEDGE. POINT BARROW.

In the following description tents, habitations, and boats are illustrated, as also some domestic avocations, as might be expected in the representation of village life.

Quite an interesting result is produced in plate 60, fig. 6, or sixth line, the drawing representing the outlines of the houses so that the interior, with the occupants variously engaged, is exposed to view.

Fig. 64.

FLAT SLEDGE. POINT BARROW.

The end of the record at No. 1 denotes a partial turn, indicating the intention of the owner of the record to at some future time continue the pictographs in that direction to the next face of the drill bow. No. 1 is on or at his empty storehouse, the framework only being drawn.

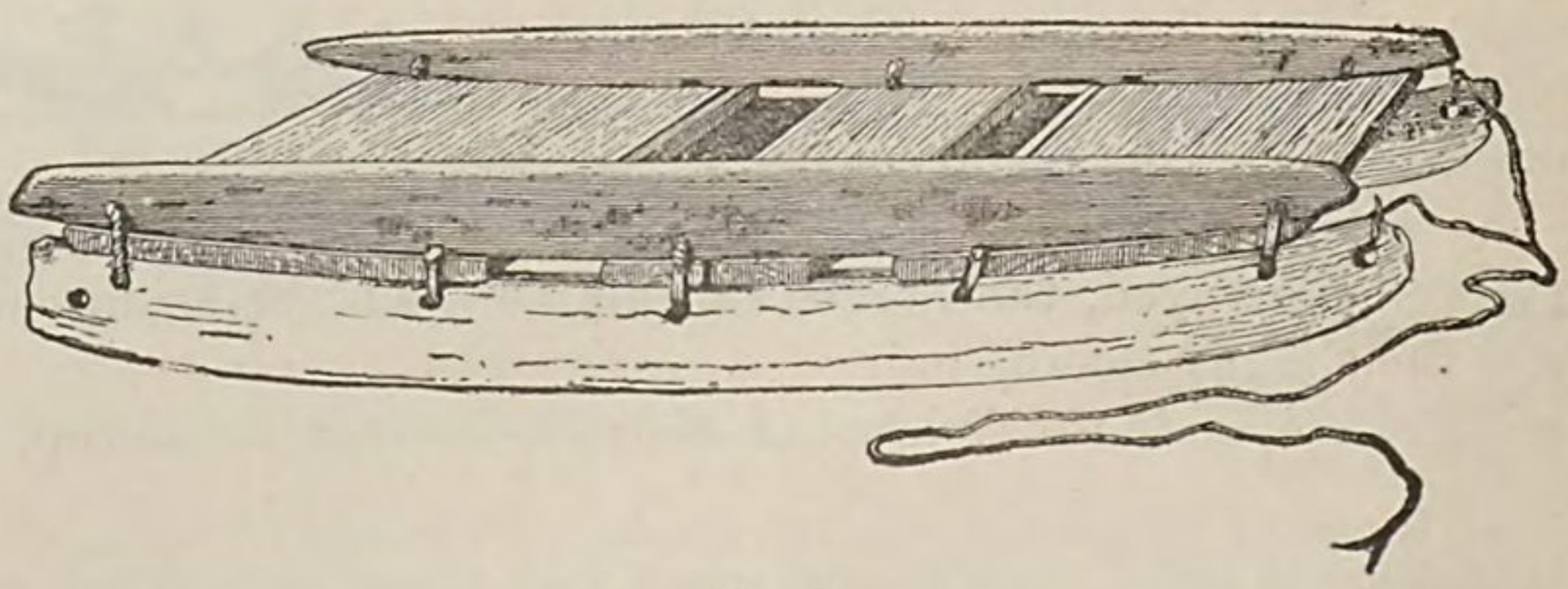


Fig. 65.

SMALL SLEDGE WITH IVORY RUNNERS. POINT BARROW.

No. 2 is a rack, with food or goods on top, while at No. 3 is the first house of the village—the latter being indicated by the several habitations. One of the occupants is seated upon an elevated ledge or seat, while another is seated on the floor before it; the other inmates are

either seated or moving about as indicated. Upon the roof is a votive offering, a bird-shaped "shaman stick," the import of which is elsewhere described in detail. Still more of the family are seen at the entrance to the house, one person within, while two are upon the roof. In the storehouse, or rather beneath the goods, No. 5, is visible a dog fight, the animals being drawn in the attitude of springing at one another; at the right is the owner occupied in removing some article from the scaffold.

Fig. 66.
SLEDGE.

In the habitation No. 6, with its entrance No. 7, are a number of persons in various attitudes. One is reclining upon the elevated shelf used for both seat and bed; while upon the floor are three seated at a table, those behind it being represented or partly hidden, the upper parts of their bodies only rising above the board. A number of other individuals are shown occupied in other ways. The scaffold at No. 8 supporting the goods, as usually represented, has also a horizontal pole for drying meat, several pieces thereof being designated, while two persons beneath seem to be touching hands or handing some article.

The habitation No. 9, and its entrance No. 10, also indicates a number of the inmates. One in particular is making gestures to another; between the two there is an object resembling a person as if wrapped in a blanket. Smoke is seen issuing from the smoke hole, while above it is what may be here intended the evil spirit of a dead person returning to take possession of a sick one.

The Eskimo generally believe in the return of the soul of the dead, and especially does the disembodied spirit hover around the house of the dead for three days, in the endeavor to return and to possess itself of a living body. In the purpose of guarding against this evil, the inmates make certain shamanistic preparations, prompted by the local shaman. The smoke issuing from the mouth of the smoke hole leaves open the way for the return of the evil spirit and his companion spirit, seen approaching from above the house.

No. 11 represents a scaffold for the storage of food, and a man is seen in the act of reaching toward the black spot denoting reindeer or venison house, as the shape indicates.

Fig. 67.
SLEDGE.

No. 12 is another interesting interior, one native being seated upon the ledge while a vessel is seen near his feet. Another man is reaching toward something near the ceiling, while the rest of the occupants of the room are seated, one of them reaching up toward the standing figure as in the act of asking for, or supplication. Smoke is issuing from the smoke hole, while some one is occupied near the fire beneath it. A ladder is placed against the outside of the entrance to the house, and a man is seen part way up near another person who seems to be occupied in gesture and conversation.

Another man is seen carrying a snowshoe-like object, probably of reindeer or deer, to the summit of the house roof to dry. The pole, with crosspiece, situated near the head of the ladder, is a votive offering erected there by one of the inmates.

No. 13 is a sledge, upon which is seated the driver using his whip. The dog is urged forward, and another native, one of the three, No. 14, who had been off trading for skins, is hailing a boat seen coming to the shore with the gunwale parallel therewith, presenting another good instance of foreshortening of the object. The man behind the sledge is walking along with his staff elevated. The inverted figure above seems to belong to a series attempted on that side of the panel of the bow drill, as another figure, having no apparent connection with the completed record, occurs also at a point over the three wading boatmen following the baidarka, No. 16, which is being pushed ashore. No. 17 is also in shallow water and appears to start away as the oarsmen are seated within with their arms extended grasping the paddle.

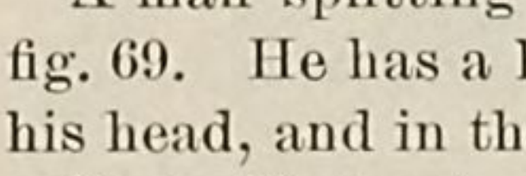


Fig. 68.
MENDING NET.

An interesting and cleverly drawn native sketch of a man mending a seine net is shown in fig. 68. The attitude is lifelike, while in one hand is portrayed a short line denoting the shuttle.

A man splitting wood is shown in the accompanying illustration, fig. 69. He has a heavy mallet or some other like utensil raised above his head, and in the act of driving wedges to split a piece of wood.

Plate 59, fig. 4, represents an old stained specimen of ivory from Norton Sound. The engravings upon this are rather deep, and are filled with deep brown coloring matter. The semicircular objects to the right of the middle, some being shown in rather an angular form toward the left of the middle, represent habitations. These characters appear in a more conventionalized form and for decorative purposes in plate 24, fig. 5.

The chief interest attached to this record is in the variety of forms of habitations, thus enabling one to perceive the differences in the variants placed in consecutive order. The two extremes are very unlike, and would scarcely be recognized as portraying a similar idea, but for the intervening examples showing the evolution in the execution of form.

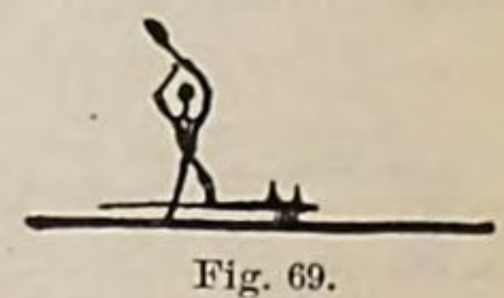


Fig. 69.
SPLITTING WOOD.

The two elongated figures to the right of the habitations denote inverted kaiaks upon racks for drying. The human figures, one of whom is shown seated, represent natives supplicating a shaman for aid. The figure has both arms extended, as in making the gesture for supplication, while the shaman, standing at the left, has his arms and hands uplifted, as in the gesture illustrated in several figures relating to shamanistic ceremonials, termed by the natives as "agitating

the air" in order to call to him his tutelary guardian, who is to aid the shaman in success, in order to comply with the request made of him.

Within the dome-shaped habitation nearest the shaman is an accompaniment of tambourine drumming, while two assistants are also engaged in invocation.

To the right of the supplicant is a repetition of his own form, indicating his harpooning a seal or other animal, while still further toward the end of the rod is an unfinished figure of a man in a kaiak—probably the supplicant in another exploit made possible through the shaman's assistance.

Turning the bow around so as to bring the convexity beneath, there appears at the left a linear outline of some undetermined animal, near to which is an umiak containing three men. They are approaching a settlement indicated by two forms of habitations, a dome-shaped or permanent one and a triangular or temporary shelter, the two denoting both kinds constituting the village.

Two racks are visible, a single one from which are suspended numerous stands of meat or fish, and a double one, similarly filled with food. The rude outline of a native at the right is nearest to a boat lying upon its side, beyond which are the outlines of four waterfowl.

Some whales are next portrayed. The one with the flukes above the water, and the spray thrown or forced from the spout holes, appears to have thrown from the water the vessel containing four natives. Their vessel is curved, making a slight arch, and the exposed end seems broken open.

The whale beyond this is harpooned by a native in a kaiak; the inflated float is still upon the kaiak behind him, indicating that not much line has run out, as the whale, also, is headed toward the hunter.

The whale to the right of the preceding character has the tail up in the air, while some water is indicated as issuing from the spout hole. In front of this is an umiak with four hunters making for a herd of walruses on and about a ledge of rocks.

The rocks are indicated by the short markings between the two parallel lines denoting them, the markings consisting of the pattern frequently mentioned herein as fish trap, and of which numerous illustrations are given, as on plate 31, fig. 2, and plate 36, fig. 2, and on the accompanying plate 59, fig. 3. This indication of rock is of interest in its differentiation from ice, as a solid mass, the latter being drawn only to show its outline as a floe, the interior part of the space being left blank to denote its colorless or transparent condition. On the same plate, plate 59, in fig. 2, is shown a floe upon which seals are taking refuge.

The speaker, or rather he of whom the record treats, in plate 60, fig. 8, is represented at No. 1. His right hand is elevated as when used in gesticulating, while his left points down toward the foot of the scaffold upon which is a repository for food. The two scaffolds at No. 2 no

doubt belong to him, and form part of the village indicated by the several habitations and storehouses.

No. 3 is a dome-shaped winter habitation, about which two people are occupied. No. 4 is another granary or food repository, while No. 5 represents a second house upon which two people are talking very animatedly. The one at the right seems to be requesting, or supplicating, both hands being directed upward toward the one spoken to.

No. 6 is the storage place for food and other articles, while in No. 7 we find another dome-shaped winter house with the inmates in view. A third person is standing before the door, while under the accompanying scaffold a fourth individual is visible.

No. 9 represents a winter house, and smoke is rising from the place where the smoke hole is usually found. The smoke looks straight and rigid, resembling a tree. The two people seem to be occupied in carrying something. The illustration at No. 10 is a scaffold for the safe location of food, and Nos. 11, 13, and 14 are similar structures, whereas No. 12 is a warehouse, probably of a white trader. No. 15 is a winter house, though apparently deserted.

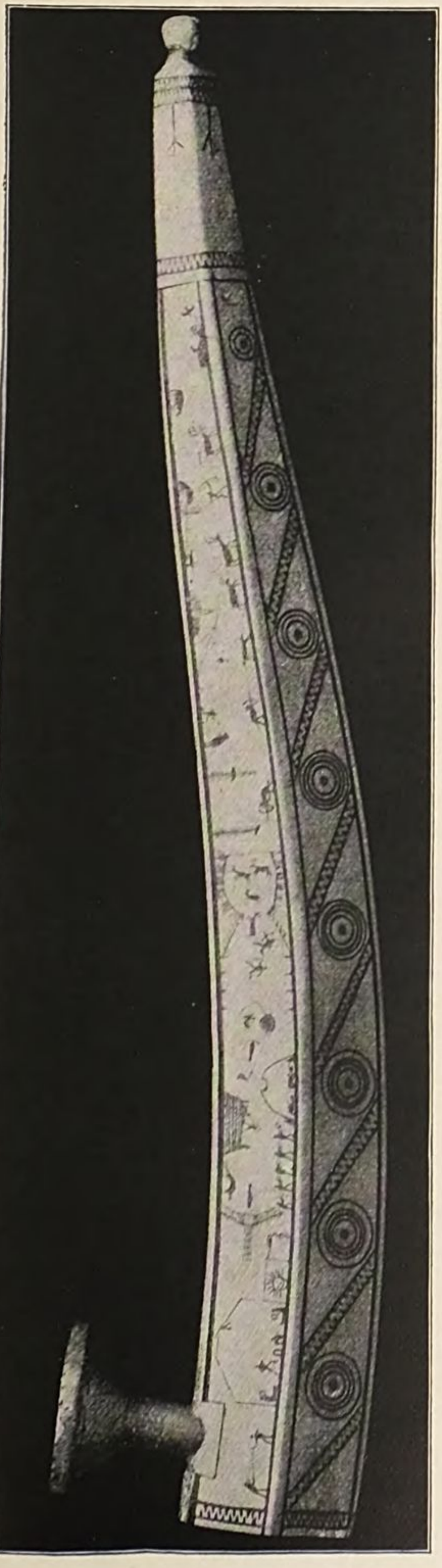
The specimen represented in plate 61 is a pipe bearing delicate and elaborate etchings of a variety of subjects. The object is made of walrus ivory, measuring $13\frac{7}{8}$ inches in length, $1\frac{5}{8}$ inches in height near the insertion of the bowl, and slightly less than 1 inch in transverse diameter at the same point. The perforation at the mouthpiece is one-eighth of an inch in diameter.

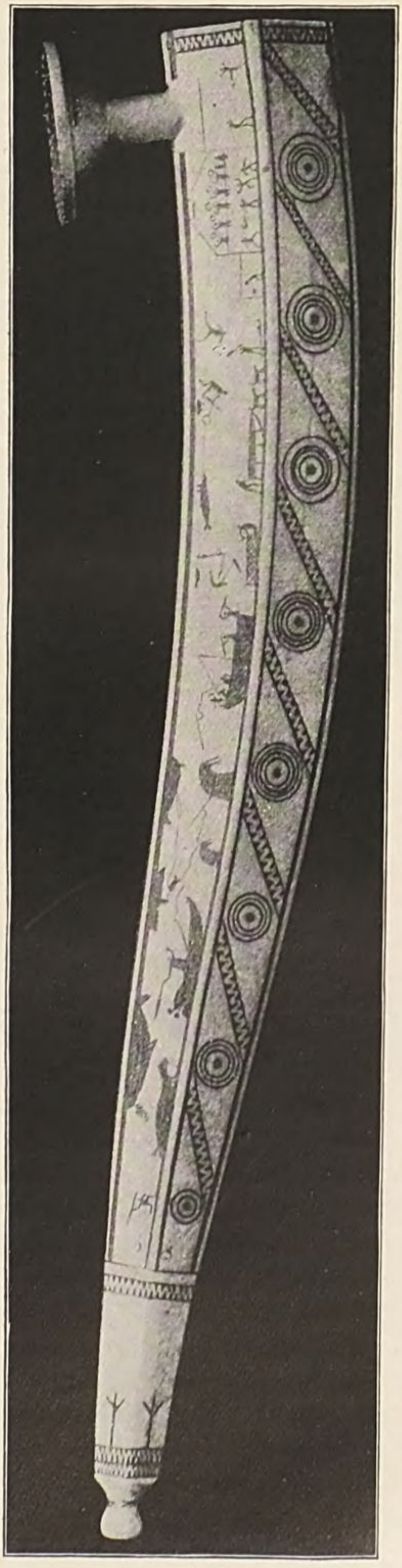
The bowl is of block tin, while the top of the bowl is lined with a thin sheet of perforated, ornamented brass. The caliber of the bowl is only one-fourth of an inch in diameter, and seems to have been made in imitation of a Chinese pipe bowl and possibly for the same style of smoking.

The pipes, like others of like form from the same locality, at St. Michael's[?], have been said to have been made for sale to traders. That may be, and does not in the least impair the interest and value of the pictographic records portrayed upon the several sides. Though the pipes may be shaped, to a limited extent, in imitation of foreign shapes, yet the pictography remains Eskimo, made by an Eskimo, and to portray Eskimo scenes and avocations.

The upper figure of the pipe presents the characters on the left side, and beginning at the extreme left is observed a vertical ornamental bar or border, similar to those drawn along the lower half of the pipe stem, though in the latter space they are arranged diagonally, and made to separate ornaments consisting of concentric rings, ornaments to which special reference is made elsewhere.

The first group consists of two persons engaged in twisting a cord, though the suggestion has been made that they appear to be engaged in a pastime which consists in making string figures, similar to the American boy's "cat's cradle," etc. The figure next to the right represents the end view of a building having two rooms, in the larger of





DECORATED IVORY PIPE.

which appear two persons seated playing on the tambourine drum, while a third person is depicted in the graceful attitude of dancing "a la Américaine." The fourth figure is crouching or kneeling before the hearth, probably to light a fire, as none appears to be there, as indicated by the absence of smoke. The presence of fire is generally indicated by the portrayal of short lines adhering to a vertical one, to denote smoke.

Upon the outside of the large room is a low structure containing the second room. The face of the sun is painted upon the wall, in reference to the return of the sun and warm weather—to spring; and the drops of water, caused by the melting sun or ice upon the roof, are shown dropping from a short wooden carved spout. The carving seems to have been made in imitation of similar ones found among the T'hlinkit and Haida Indians. The above dance and portrayal of the sun refers to highly important and complicated ceremonials observed at the return of the sun from the south.

The illustration reaching almost across the ivory space, that resembling light lines in imitation of a ladder, is a fish weir, placed in streams for catching salmon, and one of these fish is actually shown approaching the opening leading to the inclosure in which the game is secured. An otter is also drawn approaching the fish trap, denoting the destructive habits of the mammal in robbing the trap of fish thus secured and unable to escape.

The rectangular figure immediately behind the otter appears to be a view of the top of a boat landing, facing the water, and upon which are two persons, one seated near a handled vessel—probably a bucket or basket—while the other is drawn in the attitude of spearing fish, the entire sketch seeming to have reference to another method of securing fish for food.

Immediately across the ivory space, and along the opposite base line, are observable four persons, each drumming upon his medicine drum and approaching a dome-shaped habitation, within which are portrayed two persons, crawling forward on hands and knees to receive from a seated figure some mysterious or magic substance. This is a shamanistic ceremony, in which some charmed medicines are secured, and by means of which some special success is expected in the chase.

The character in the middle of the ivory rod, nearest to the dome-shaped house, is a spout of water, at the narrow end of which is a transverse line, with a shorter one within the inclosure. These two lines denote the logs of wood employed by the beaver in building a dam. The beaver is shown swimming toward a dark spot, which seems to consist of a series of short scratches, and which denotes the deposit of twigs for food, while the rounded dark disk upon the shore line represents the beaver's house. The animal is accurately portrayed, the tail being especially conspicuous to give specific indication as to the species of animal intended to be shown.

In the next figure is represented one method of securing deer. The

inclosure, within which three deer are shown, is a pen made for securing such game, the fourth animal to enter having been driven forward from the open country and guided toward the entrance by the erection of low brush fences, as will be observed, extending diagonally toward it from the base lines at either margin of the ivory. The two hunters, armed with bow and arrow, are seen running toward the inclosure to shoot the deer.

Beyond the rear fence or inclosure of the deep pen are two pine trees. Upon one is perched a bird, while half-way up the other is a small mammal. The latter is not drawn in imitation of the porcupine—as elsewhere portrayed—and it may be intended to represent the marten. The next figure is a black bear, erect upon his hind feet and being attacked by a hunter armed with a spear.

The next scene is a snare trap, which has caught and suspended in the air a small animal. The trap is surrounded by vertical sticks so arranged about the baited part that, to cause it to be sprung, the animal can reach the bait only at one open space. The noose is arranged so as to catch the animal about the neck, in imitation of the American boy's rabbit snare.

The next trap shown consists of a log, or sapling, resting upon a short upright piece, so that when the bait is touched the log will fall and secure, by crushing, the animal so unfortunate as to enter. The top is weighted by extra pieces of timber and sometimes stones, secured so as not to fall off. A small animal is seen approaching the trap from one side, while from the other is seen approaching a bear; the idea being that this arrangement or kind of trap is employed in securing both kinds of animals. The small deer and men shown along the opposite base line represent two hunters disguised in wolf skins so as to more readily approach within shooting distance of the reindeer, while the third has gone forward and shot an arrow, which is seen in its flight approaching an animal.

The last figure of the group is a fallen reindeer upon which one bird of prey has alighted and another is seen descending. The feathers in the outstretched wings are clearly indicated and the attitude is very lifelike.

The upper ridge of the right side of the pipestem also bears some interesting scenes. That on the section nearest the bowl contains two human figures, one representing a native in the attitude of kicking a ball, his leg being still in the air, while the other person is portrayed as reaching out his hands as if to catch the ball as it descends. The illustration next toward the left represents a habitation with two rooms, in the larger of which is a horizontal line, midway between the floor and ceiling, denoting the shelf used as seats and for sleeping. Upon this shelf are seven persons, five of whom are represented as drumming, using the ordinary tambourine for the purpose.

Beneath are five characters, four being shamans, while the fifth, a

smaller one, shown as horizontal in the air, is the demon which has been expelled from a sick man. The smaller apartment shows one person with a dish, or pan, probably preparing food for the participants in the ceremonials conducted within the adjoining room.

Outside of the house is a man portrayed in the act of splitting wood, the log beneath his feet having two wedges projecting which are being driven in to split the timber. A second individual is pushing at his dog sledge, he having returned with a load, as may be observed, the logs still in position at the front of the sledge.

The figure next to the preceding is seated upon the ground and apparently mending his net. The characters above the wood chopper and the returning traveler are drawn upon the opposing base line. The figure in the attitude of running is going to the assistance of one who has caught a seal, the latter resisting capture by the use of his flippers, which are drawn extended from the body to denote their use in the present instance. The ring indicates a hole in the ice, while the bar held in the hands is the piece of wood to which the line is secured.

The illustration of fishing through the ice is shown in several records, but in none more graphically than in the figure nearest to the seal hunter above referred to. The native is here shown seated, and before him is a fish lying attached to a short line by which it is secured, while with the other hand the fisherman is holding his rod, the line passing through a hole, and beneath are shown the sinker and hook, while a fish is seen approaching to take hold. The representation of the transparency of the ice was no doubt beyond the ability of the artist, and he therefore very wisely made no attempt at any indication of a surface line.

By turning over the pipestem the record may be renewed at the figure of the umiak, containing five hunters, four of whom are using the paddles, whilst the fifth is throwing a harpoon toward a large walrus. This creature has already been harpooned by a hunter in a kaiak, who is holding up one hand with his fingers spread, while in the other hand he holds his paddle. Upon the stern of the kaiak is the float, used in connection with the harpoon line. A second walrus is observed immediately behind the harpooned animal.

At the extreme left of the stem is a crouching or kneeling hunter preparing to throw a harpoon at a seal or female walrus, from whose mouth drops of water or perhaps blood are seen to trickle.

Upon the opposing base line of the pipestem is a single whale hunter in his boat, a small whale having been harpooned, while to the line a large skin float is attached to impede the animal's motion. The other whale is escaping, and the water is shown spouting from the nostrils of both animals.

The ornamentation upon the two lower sides, as well as the tree-like figures near the mouthpiece, will be discussed in connection with the evolution of ornamentation.

The specimen represented in the upper figure in plate 62 measures 12 inches in length along the central line and $1\frac{5}{8}$ inches in height at the back of the bowl. The latter measures $2\frac{1}{8}$ inches across the top and is $1\frac{1}{2}$ inches in height. The pipestem is made of a fine compact piece of walrus ivory, which retains some of its lateral curvature as well as that visible from the front view. The bowl is symmetrical and was undoubtedly turned on a lathe.

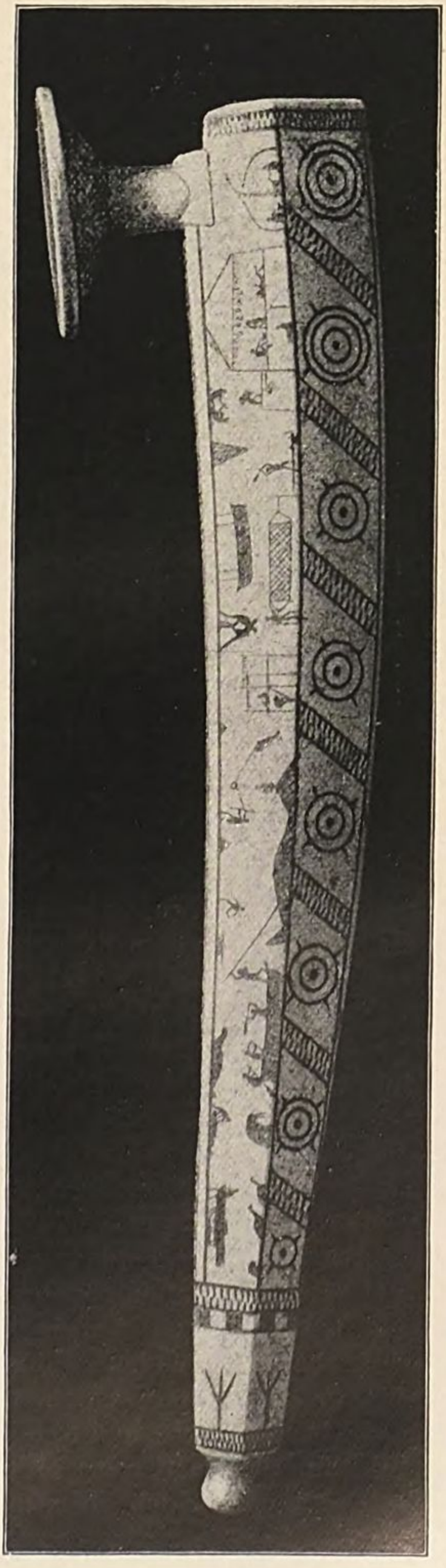
The characters portrayed along the middle base line, beginning nearest the mouthpiece, represent, first, a seal, then two water fowl. A walrus then appears above the surface and is looking after the umiak, which has passed in pursuit of a whale, and which creature has been attacked by one of the hunters. The second hunter is holding aloft his oar, a signal to indicate to others near by that assistance is wanted. The other men in the umiak are using the paddle so as to keep pace with the whale, which is shown spouting.

The elevated scaffold which is next portrayed was a notched piece of timber set in place to serve as a ladder, and one person is shown ascending, a bundle being attached to his back—probably food—as the other person on the scaffold is occupied in preparing food of some kind, which is then suspended from the horizontal poles, as shown in the etching. The next illustration, to the right, represents a fisherman hauling up his net to dry, while another man is occupied in splitting wood, the wedges used for the purpose being shown in the log at the end resting upon another piece of wood or a stone.

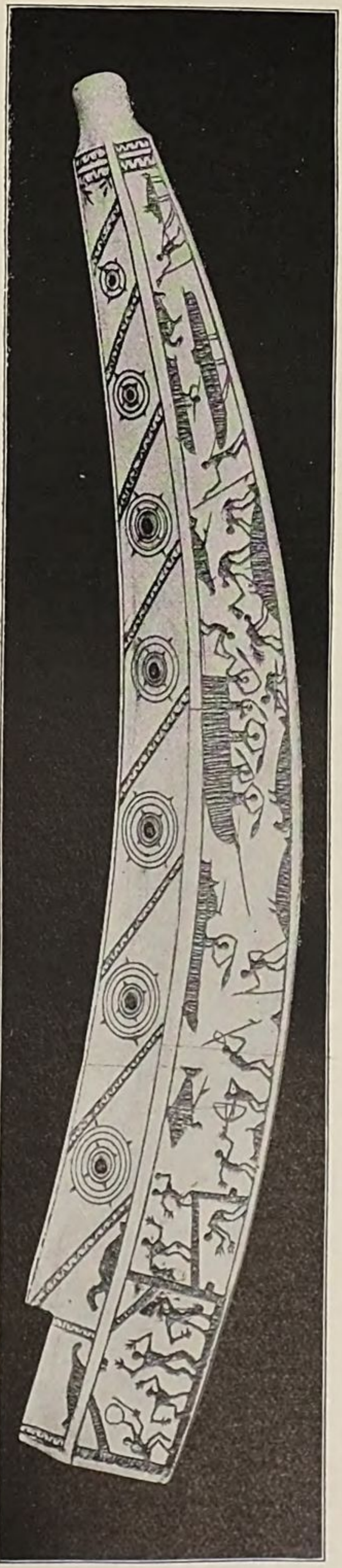
The house, which comes next in order, has two rooms, upon the roof of the smaller one being shown an individual carrying into the house some pieces of wood, which have been split by the wood chopper. The horizontal line at the top of the large room has suspended from it small round objects which denote some kind of food; and at the middle line, the shelf, used as a bed or for seat, shows three persons; the first one, with one leg hanging down, is pointing, or reaching, toward a dish containing food, as the second has already placed some into his mouth. The third person is lying down, with legs curved and his head resting upon a pillow or bale of some material found convenient for the purpose. The person seated upon the floor does not seem specially occupied, and directly behind is a vertical line, upon which is a lamp, the usual method of constructing these being that of placing two soapstone lamps upon a crosspiece, so as to balance, the center of the latter being secured to a vertical stick.

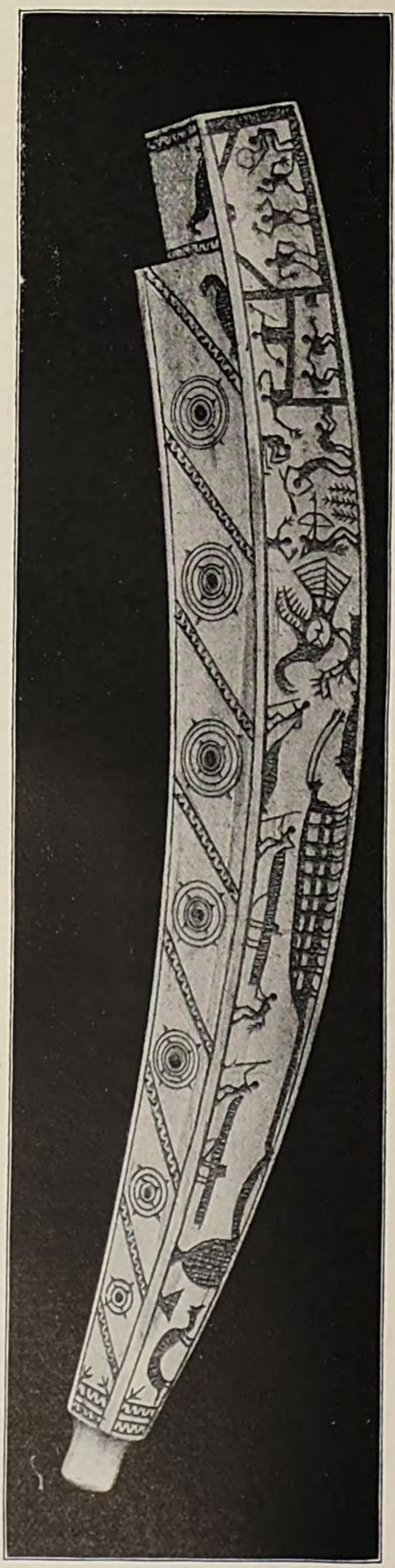
The last illustration denotes a dome-shaped structure with a smoke hole in the roof, one person being apparently busied with his pipe, while the other has before him a kettle, in which he is stirring with a stick or ladle. Between the two persons is the fire, from which the smoke is seen to rise and to escape through the opening at the top.

Within the small room of the house above mentioned is a short vertical line, to which are attached some small globular figures. The



DECORATED IVORY PIPE.





DECORATED PIPESTEM.

line represents the spout and is on the outside of the house, while the globules denote drops of water—similar to those portrayed on the pipe with the metal bowl, plate 61—and refers to the melting of the snow upon the roof, as the approach of spring is referred to especially. On the opposite side of the specimen, the first character is a man, with a bundle on his back, running in the direction of an inclosure and deer drive. Two reindeer are already in the pen, while three animals are running toward it, closely pursued by the drivers, one of which is armed with bow and undoubtedly also arrows.

The third person, walking along the upper base line, is in attendance at a fish trap, into which four fish are seen to swim. Beyond this is a tall pine, upon the summit being a bird, and half-way up, a small mammal.

The scaffold beyond this has upon the roof a man engaged in hanging up deer, which have been captured and brought home by the two men at the dog sledge, upon which is another deer. Immediately above these figures is a man leading a dog hitched to a sled and thus dragging home two seals—the latter represented upon their backs, just as these animals are gotten along easily on account of the abundance of hair. A large bear is shown upon his haunches, one native attacking him with a spear, while the second person has started to run away after shooting an arrow into the bear's back. The remaining two figures denote two kinds of traps used in catching small animals, one being caught by a noose, while the second is a deadfall.

Upon the upper base line, beginning nearest to the tall pine tree already described, one man is shown attempting to take a somersault, possibly as a pictorial portrayal of the sense of joy at the return of summer; the second person has a rod which he is dragging home. The two dogs are very cleverly portrayed, while the man next to the left is spearing an otter. The animal upon the ground seems to be intended for a marten.

A clever sketch is presented in the next illustration, in which a native, with a pack on his back and a small bucket in his hand, is gathering berries.

The record ends with a deer, which has been secured by means of suspending a strong noose over a path or trail frequented by the animal. The hunter has come up to kill the captive with a spear.

The decorative designs are treated of elsewhere.

The specimen shown in plate 63 measures $10\frac{5}{8}$ inches in length, $1\frac{1}{2}$ inches in height at the highest part near the bowl space, and seven-eighths of an inch in diameter.

This differs from the other pipes in the manner of placing the engravings, these occupying the lower spaces, while the upper bear the concentric rings and diagonal lines. The left-hand figure in the upper illustration in the plate denotes a habitation with its entrance. Seated upon the projecting shelf seat is the drummer, holding the tambourine drum in one hand while with the other he grasps a drumstick. The

other figures are the dancers, in various attitudes, with hands and fingers extended. Upon the roof of the entrance are two men in similar attitudes, while within the entrance is one figure of a man in the attitude of falling forward upon the ground. The dance does not appear to be a shamanistic ceremony, as otherwise the indication of a demon would be observed.

In front of the entrance is a group of figures in a threatening attitude, especially one of the men, who appears to be drawing his bow with the intention of shooting his vis-à-vis, who has a hand up as if guarding his face. There appears to have been a discussion respecting a seal—lying upon the ground between the men—which resulted as suggested.

The next figure is shown in the attitude of spearing a seal in the water, the spear bladder being shown at the upper end of the weapon. The next man is dragging home a seal, while the next following is engaged with a like animal, stooping down at the tail and for some purpose not indicated.

The large creature lying upon the base line, next to the right, is a whale. One of the hunters has a hatchet and is cutting up the animal, while the two assistants are otherwise engaged at either end. Next toward the right, is another hunter in the act of dragging along upon a sledge his kaiak. The last person to follow has upon his sledge a seal which has been captured.

Apart from the ornamentation in the upper ridge, there are two seals visible at the left.

Upon the reverse side of the pipestem shown in the lower figure in plate 61, the regular ornamentation occurs likewise along the upper face, only two compartments at the extreme right being reserved for the figures of seals.

Beginning at the right-hand end, and with the lower plane, a habitation, similar to the one upon the opposite side, is portrayed, the only difference being that there are two human figures drawn within the entrance to the home instead of one.

Another figure of a man is upon the outside, seemingly leaning against the door, while behind him are two men in mortal combat, one preparing to thrust his spear, while the other has a drawn bow with arrow directed forward toward his victim. Some plants are shown upon the ground, which may have been the cause of the quarrel which seems to be indicated.

Doctor A. Warburg, of Florence, Italy, kindly sent me sketches taken from a pipe similar to the preceding, which he found in the collection of the American Museum of Natural History in New York City. An interesting pipe from St. Michaels is in the collection of the Georgetown College, Washington, District of Columbia. The story told by the etchings is the same as in plate 62, and it appears as if a certain person, or persons, were the author of all of these examples, the

characteristics of the etchings being the same, as well as the general import of the narrative. In the Georgetown College specimen, however, the base line above or against which are shown the figures in various pursuits and avocations extends from the front or bowl end spirally around the stem back to the mouthpiece. This is unique so far as known, and appears to be simply a fancy on the part of the maker to cause quicker sale of the specimen, nearly all of this class of ivory workmanship being made for sale to visitors.

Plate 24, fig. 2, is a triangularly-shaped drill bow from Sledge Island. It is 13½ inches in length. The three sides are very fully decorated, the back of the bow bearing the greatest amount of work. The three square figures at the left represent scaffolds, upon which storehouses are located. Between these are two elongated figures representing winter habitations. Upon the house at the left are four human figures in various attitudes of gesticulation. The thin vertical line at the right of the entrance, having a small transverse scratch at the top, denotes a votive offering, indicating that one of the occupants of the house was lately deceased. Five men are seen under and about the second storehouse. Upon the next or second habitation from the left are four human beings, the larger being on all fours, as if in the attitude of watching those just mentioned. The next figure is occupied with some small object at a fire, the smoke of which is seen rising.

Of the two succeeding figures, one is apparently holding a line, while the other appears to be occupied in some gymnastic performance. Beyond the next storehouse is another habitation. Beside the two human figures will be observed smoke issuing from the fire, and a rack upon which are suspended some objects, possibly meat, or some other materials. The fourth habitation from the left, somewhat larger and more rudely drawn than the preceding, also has upon the roof five individuals, with arms and legs in various attitudes. The two vertical lines with a horizontal pole between them represent a meat rack, and the other lines indicate meat or fish. The six human figures immediately to the right of this meat rack are placed so that the heads point toward the center of the record, while the feet of three rest on the bottom base line, and the feet of the other three on the top base line. This is intended to represent the idea of a circle, as the individuals are engaged in a ceremonial dance. One of them, evidently the shaman, is shown with three lines projecting from the head, possibly indicating a mask. From this point to the right end of the drill bow the record occupies both top and bottom lines of the illustration. Upon the dwelling to the right of the dancers are four human figures, one with a spear directed toward a deer, while the individual on the top of the roof is pointing with one hand toward the animals, and his companion has both arms raised in exclamation. The square elevated structure, adjoining the house, represents a storehouse. At the top of the rod, above these human figures, is a man dragging home a seal which he

has captured, while in front of him stands a reindeer which is being shot at by a native who is armed with bow and arrow. A little farther to the left, upon the same line, a man is lying flat upon the ground with his gun directed toward the deer. Between the two elevated storehouses are eighteen natives in various attitudes, participating in a dance. At the right is a winter habitation, upon which an Indian stands with one hand elevated, the object in his hand evidently denoting a tambourine drum. A votive offering is shown over the entrance to the habitation, while to the right is seen rising a column of smoke. Upon the scaffold beneath the square part of the structure representing the storehouse is an inverted boat suspended for drying. A partly obliterated figure of a human being occupies the space between the storehouse and the end of the rod. The under sides of the bow are filled with figures of habitations, racks from which are suspended pieces of meat, and individuals occupied with various domestic duties. One portion of another part of the record represents an umiak going away from land toward some small objects which are believed to represent seal, while on the shore are represented four men dragging at a large animal, possibly intended to represent a seal, and in front of them a dog is hitched to another seal, dragging it home to the camp, possibly to the left.

Plate 64, fig. 3, also represents an ivory drill bow from Diomede Islands. The ornamentation shown at the left end of the illustration is an attempt at duplicating the peculiar zigzag markings, the simple form of which is shown in plate 31, fig. 4. The next oblong figure on four piles represents a granary or food storehouse. Next is shown a human being with his arms extended in the act of making some gesture. To the right of this is a building resembling a white man's habitation or trader's store. The mammal to the right of this represents a bear. Next come the figures of two walruses, and beyond the middle to the right is the outline of a large bear in the attitude of eating some mammal which he has captured at the seashore, apparently a seal or large fish. To the right of this is a very crude figure, somewhat resembling a whale, with the tail elevated and the head down, though from the "blowholes" there appears to be some spray ascending. The latter seems to be represented by dots instead of the usual short lines. To the right of this, upon the base line, is a long-necked animal denoting a seal, and beyond, at the extreme right, is a granary or storehouse elevated upon piles. Turning the specimen so that the upper line becomes the base line there will be observed at the left, to the right of the granary just mentioned, a figure of a seal, next two fair outlines of trees, and a walrus. The pointed figure, almost triangular in shape, appears to denote a summer habitation. The character in the middle of the record, apparently a scaffolding, is not clearly determinable, as it seems to indicate from one point of view a granary upon a scaffold, but the projection at the left with two short vertical lines

depending therefrom suggests an attempt at denoting some form of animal, which seems obscured by the square structure attached to the opposite line. A little farther to the left is the figure of a man with arms outstretched, and beyond this the body of a walrus with huge tusks. On the opposite side of the record, at the extreme right, is portrayed a rock projecting from the sea, upon which are resting four seals. A short distance beyond these is seen an umiak, and toward the left a whale, from above the head of which is indicated by simple little triangular dots an explosion of spray, as is shown in the figure upon the opposite side of the drill bow. This is of peculiar interest, and indicates either inexperience in portraiture on the part of the native artist or a high degree in conventionalizing. The remaining figures can be readily determined and need no further interpretation. Upon the narrow convex edge of the bow in the center of the entire record is the outline of another whale with the triangular dots for spray being arranged a little nearer together so as to approach more nearly the usual method of indicating spray or water thrown from the blowholes. To the right of this is a walrus and five seals, while to the left is a seal with its young on its back, and other characters readily determinable by the reader without further explanation. The bottom of the bow bears a continuous series for more than half of its entire length of conventionalized seal heads, indicating ornamentation rather than an attempt at a historical record.

Fig. 70.

PICKING BERRIES.

Fig. 71.

CUTTING UP A WALRUS.

Fig. 70 represents a native picking berries. This illustration is of peculiar interest, as the nucleated circles upon the short leaved stems denote the fruit. The same figure with the blossom, in which the three short radiating lines are added to denote the flower, is shown on plate 46 in the powder measure. Upon this too are the short lines running downward from the ring on the measure, to which are attached three berries, i. e., three nucleated circles.

The engraving represented in fig. 71 is selected from a series of characters on an ivory drill, locality unknown. The horizontal body represents a walrus, lying on its back, being cut up by the two men, the one at the left hand using a cleaver, while his companion is otherwise engaged at the head of the animal. The artistic execution, apparent, is extraordinarily good; the lines being deep single creases, indicating the engraver to have been thoroughly experienced in the use of the graver.

Fig. 72.

CUTTING UP REINDEER.

Fig. 73.

CUTTING UP REINDEER.

Two illustrations of natives cutting up reindeer are shown in figs. 72 and 73. Both are very cleverly drawn, the limbs of reindeer being very naturally indicated, as assumed in dead animals.

Fig. 74.
CATCHING FISH.

A very clever sketch of a native fishing through a hole in the ice is shown in fig. 74. The hole is indicated by a small circle while the ice itself is not shown—that being transparent. One fish has already been caught, as shown above. The absence of lines to denote ice is similarly evident in the Kolguev illustration on plate 10.

A seal caught through the ice is shown in fig. 75, the hole being shown back of the hunter by the single form of a loop, as in the illustration referring to seal spearing, fig. 76, where the hole is again indicated by a circle on the ice line.

This scene is taken from the Chuckche chart, though the drawing is evidently of Eskimo type. The small loop above the nose of the seal is simply an indication that there is a hole in the ice, made by the seal for breathing.

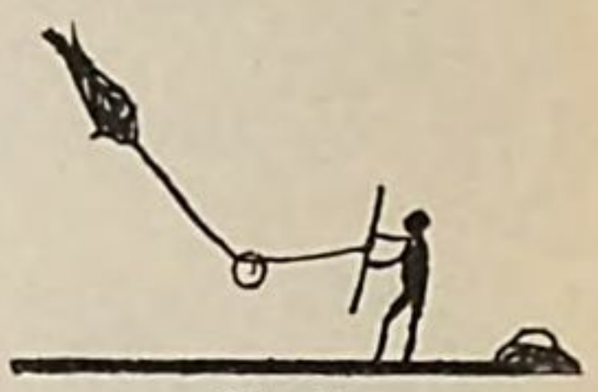


Fig. 75.
CATCHING SEAL THROUGH THE ICE.

A like specimen of Alaskan work is shown in fig. 77, where only the surface of the ice is shown, and the figure of animal is absent—beneath the surface.

The artistic execution of the several objects portrayed in fig. 78 is rather crude. The two summer habitations or tents at the left have between them a long pole from which are suspended cords for the reception of fish for curing. The person engaged in hanging up this article of food is drawn in a crouched or seated manner, not because he or she was so seated, but because the figure was made too large for the space within which to represent it in an upright position. Figures in a seated posture are always placed in contact with the surface upon which they are presumed to be so located, either upon the ground, in a canoe, or on a projecting shelf inside of the dwelling. The circumstance of a sick person being brought before a shaman for treatment is quite different, as in such instances the human figure is drawn as if lying down and may not be in contact with the ground.

Fig. 76.
SPEARING SEAL.

Fig. 77.
SPEARING SEAL.

The tree-like figure at the right of the tent is smoke arising from the fire. The two roofed buildings are built in imitation of the habitations of white traders, one of them having a door at the side, and a covered portico, or platform, at the side.

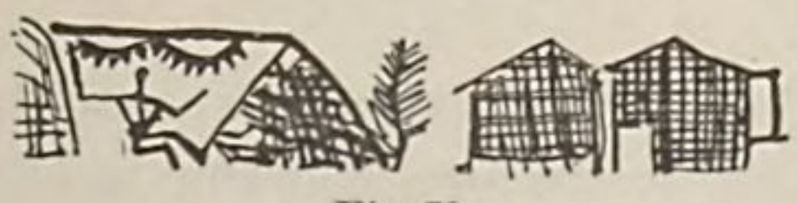


Fig. 78.
CURING FISH.

The scene on the flat piece of bone shown in fig. 79 represents several subjects. In the upper half, at the right, is a summer shelter, within which are two figures. One is seated upon the floor, while the

EXPLANATION OF PLATE 64.

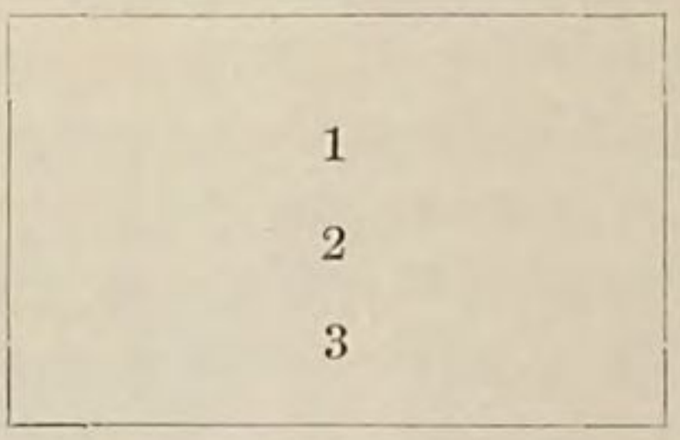
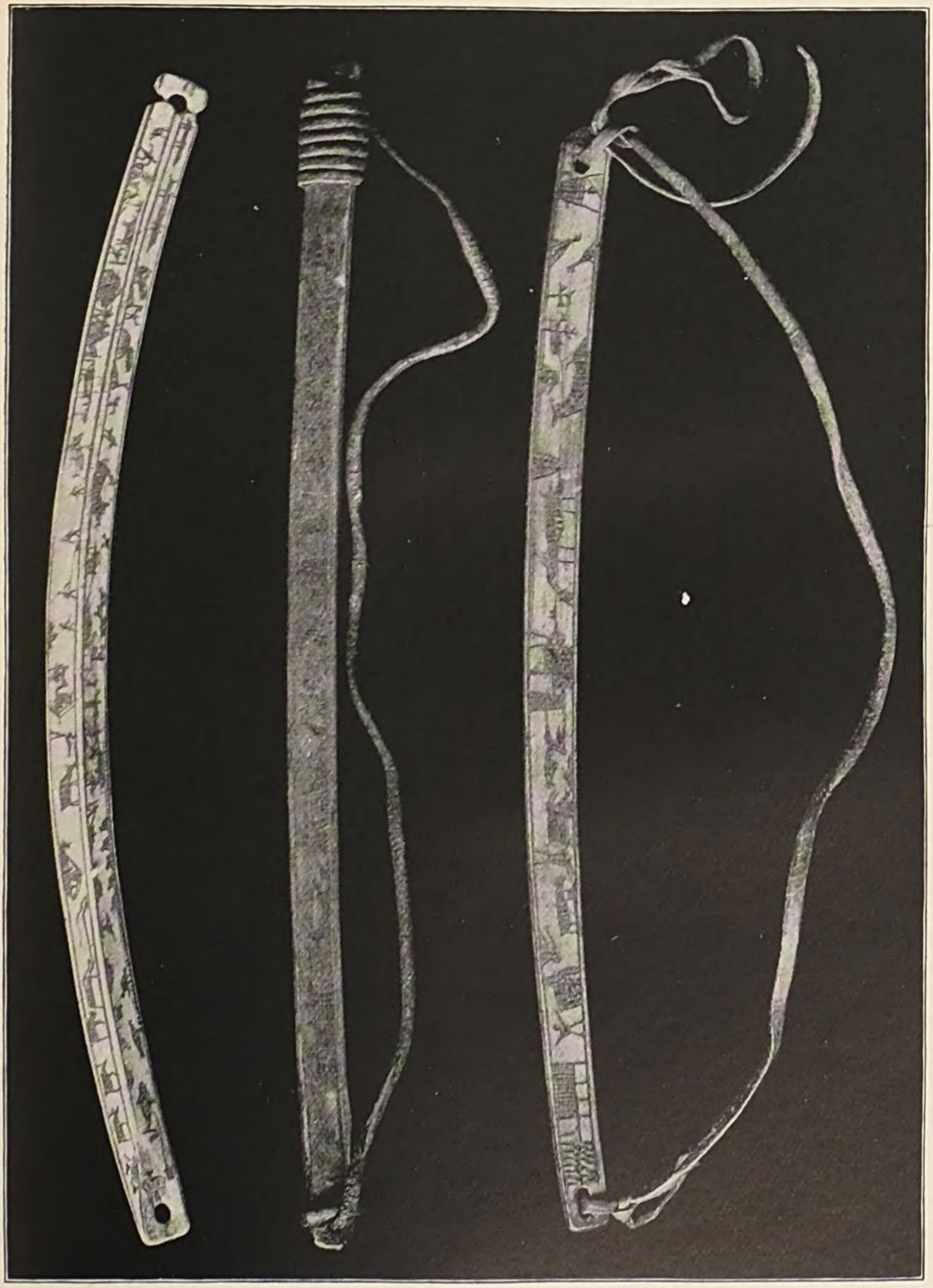


Fig. 1. Drill Bow with Three Faces, Ornamented with Pictographs.
(Cat. No. 38887, U. S. N. M. [Accession number in record book is 38886.] From north side of Norton Sound. Collected by E. W. Nelson.)

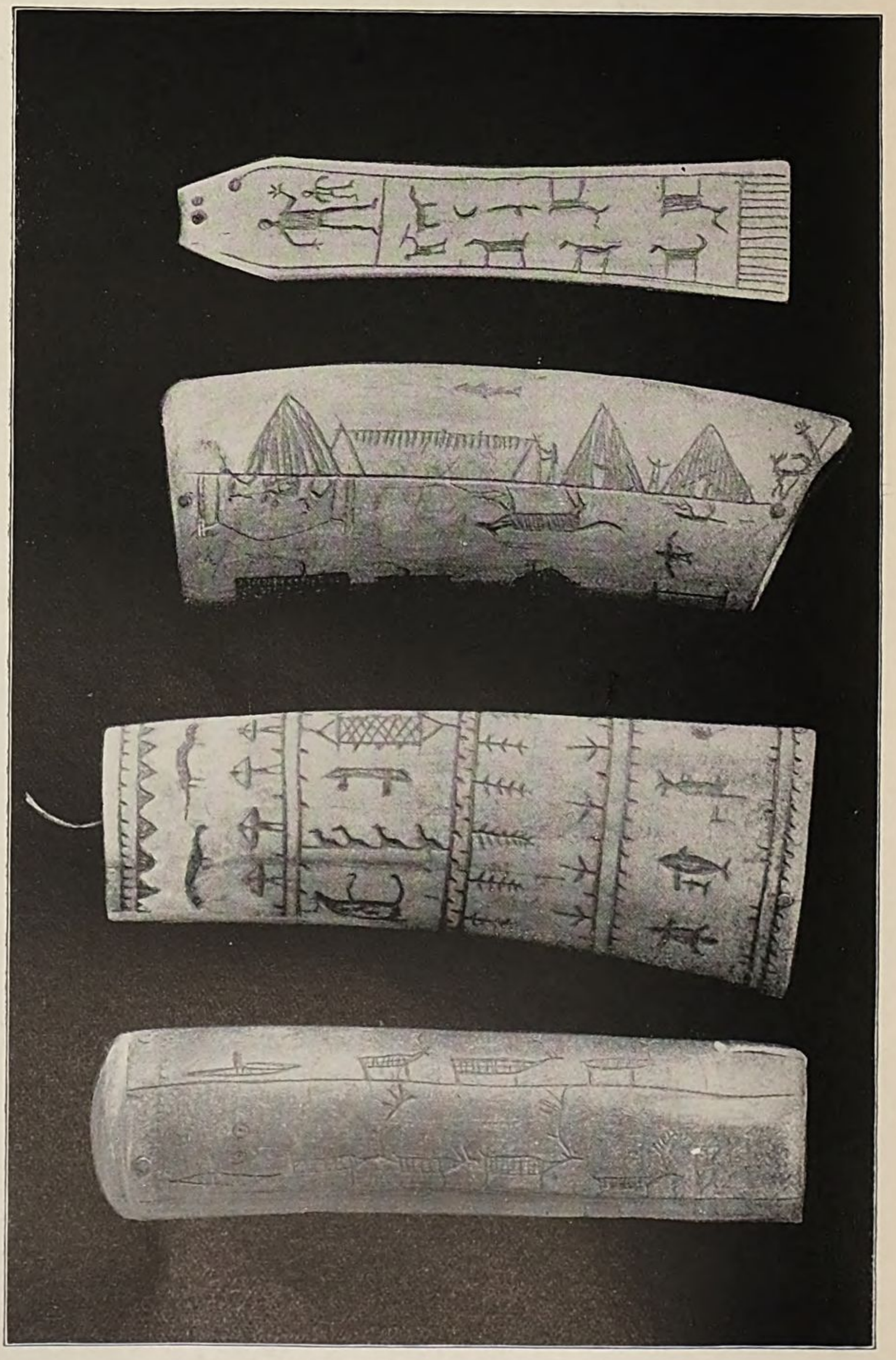
Fig. 2. Drill Bow Stained with Age.
(Cat. No. 63622, U. S. N. M. Diomede Islands. Collected by E. W. Nelson.)

Fig. 3. Drill Bow.
(Cat. No. 49163, U. S. N. M. Diomede Islands. Collected by E. W. Nelson.)



DRILL BOWS BEARING RECORDS.

DATE DUE



ORNAMENTED CYLINDRICAL CASES.

EXPLANATION OF PLATE 65.

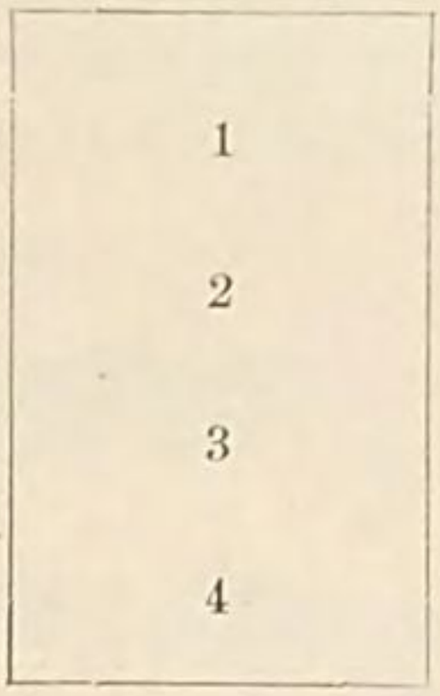


Fig. 1. HUNTING TALLY.

(Cat. No. 39437, U. S. N. M. Point Barrow. Collected by Lieut. P. H. Ray, U. S. A.)

Fig. 2. POWDER HORN OF ANTLER.

(Cat. No. 129221, U. S. N. M. St. Michaels. Collected by L. W. Turner.)

Fig. 3. IVORY BOX FOR SNUFF, FUNGUS, ETC.

(Cat. No. 64186, U. S. N. M. Hotham Inlet. Collected by F. W. Nelson.)

Fig. 4. THREAD CASE OF REINDEER HORN.

(Cat. No. 56615. [Locality?] Collected by Lieut. P. H. Ray, U. S. A.)

other has his hands extended and elevated, as if calling attention to something of importance, or making the gesture for surprise. The tall tree-like object next to the habitation is a column of smoke arising from a heap of burning wood, visible upon the ground, while to the left, against the fire, is a kettle, in which some one is stirring with a stick. That the person is tired appears to be indicated by his resting his hand upon his knee as he leans forward toward his work. The rack, bearing a long horizontal pole, is next toward the left, and beneath it is a man hanging up fish, which has been prepared by the one at the fire. The individual has a piece of meat raised toward the bar, while before him is a vessel from which it was removed. The long net stretched from the left-hand scaffold pole to the end of the record is a gill net, a form used to set in shallow water and generally stretched at right angles to the shore line, in which manner more fish are intercepted than if it were parallel therewith.

The small projections above and below the net are floats and sinkers.

Plate 65, fig. 2, shows a powderhorn made of antler. It was obtained at St. Michaels. The specimen is decorated by incisions cut lengthwise, to both sides of which are attached various figures of animals, birds, and human habitations. The principal figure shown in the illustration represents three summer habitations, while one of the natives is occupied in suspending meat from a drying pole. At the left of this is a habitation beneath which is shown another habitation, inverted, in which are portrayed four human beings. To the left is a fox, or wolf, holding in its paws some small creature, evidently game which it has captured. The animal seems to be pursued by a bird of prey shown to the left, both having probably been hunting the same quarry.

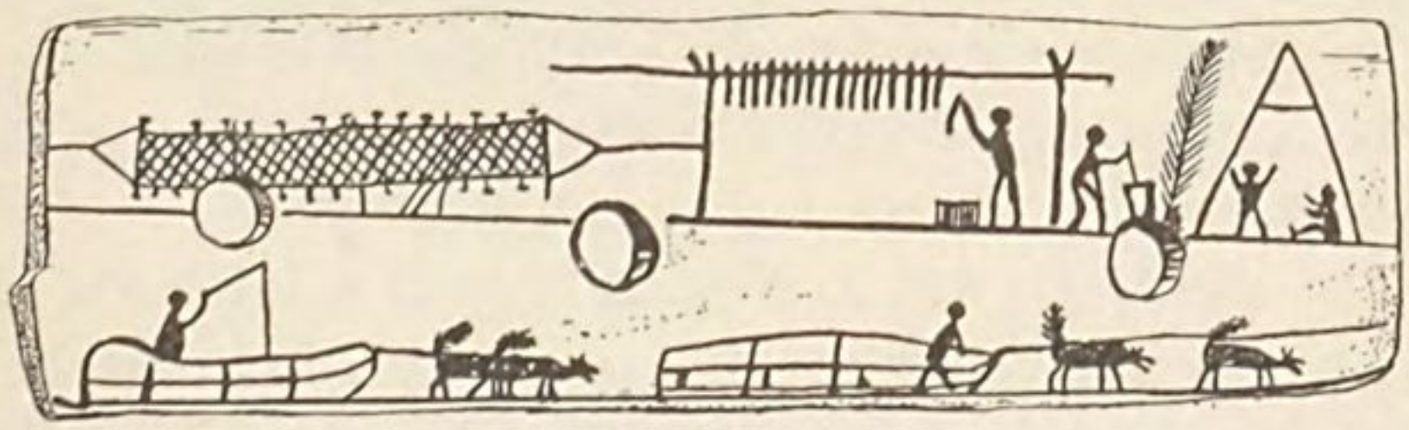


Fig. 79.

ENGRAVING ON BONE.

Plate 65, fig. 3, represents a so-called ivory box for snuff, though the specimen appears to be made of horn. This was obtained at Hotham Inlet. The specimen is divided into four different compartments by means of transverse lines, each line consisting of parallel incisions decorated as in plate 28, figs. 2 and 4. The spaces contain representations of fish, sledges, tree ornamentations, and various other characters, notably the outlines of a number of human beings, apparently dancers with rattles.

Plate 14, fig. 2, represents a bone or reindeer-horn specimen from St. Michaels. Upon the lower side, at the left, is represented a boat with four white men carrying out supplies from a trader's store, within which and behind the counter stands another man with a hat upon his

head. To the right of this is shown another hut, about which four persons are occupied in preparing food. One is standing over a kettle with a utensil in his hand, as if stirring, while another, to the right of the smoke, is in the act of reaching into the vessel over which he is occupied. At the extreme right is a meat rack. By turning the specimen upside down there will be observed approaching from the left a native pushing a sledge, to which are attached two dogs. In front is a native with hands lowered and extended, as if calling to urge forward the dogs. At the right is a scaffold which is in connection with an underground habitation. From the top of one of the smoke holes is seen rising a heavy cloud of smoke. Two natives are also portrayed, the one at the right with arms extended, as if making signals. To the left is an upright pole over the entrance of the habitation, which represents a votive offering.

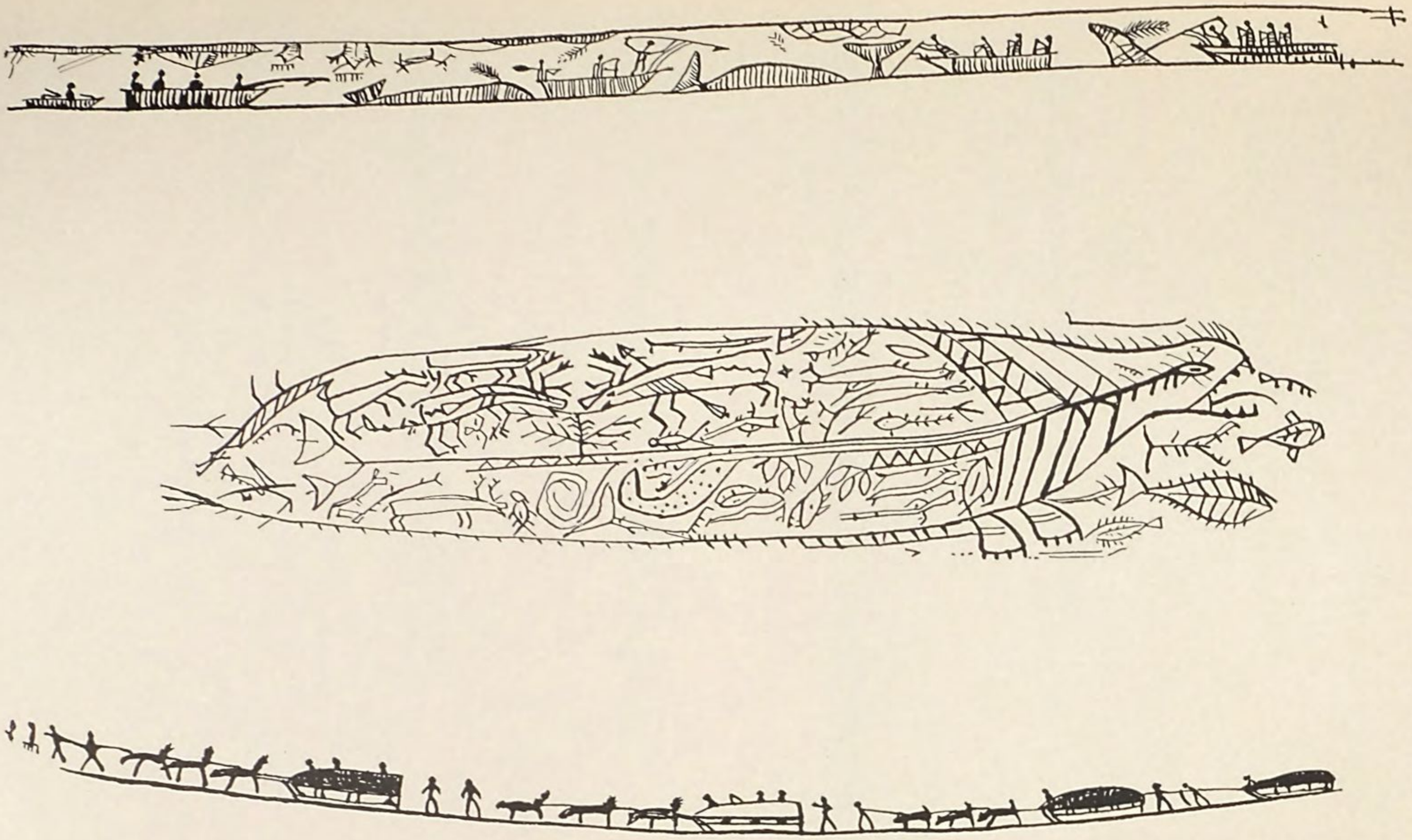
Plate 66, fig. 3 represents a kantag or bucket handle from Norton Sound. It is an old time-stained piece, and bears upon the lateral edges a few sharply incised figures, that upon the right or upper side denoting a procession of loaded sledges. The attitudes of the dogs following them, as well as of the men assisting, are very natural. Upon the opposite side of the middle are three kaiaks, on either side of which are a number of seals, while at the extreme left are two low mounds representing winter habitations.

In plate 67, fig. 3, Nos. 2, 3, and 4 indicate the summer habitations of some natives who had gone away to catch and cure salmon. The fish are drying upon the racks shown in Nos. 1 and 5; at the latter one the natives are hanging up fish, while at the other end of the rack is the ever present dog.

No. 6 denotes the boat with three men inside, while the fourth is towing the vessel toward shore.

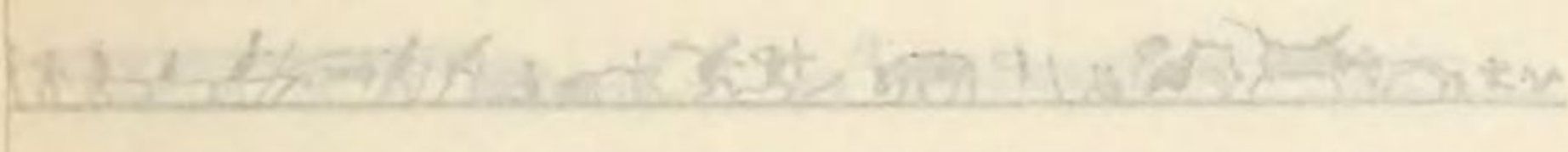
The individual at No. 7 is making the gesture for calling attention to something which he has at his feet—probably a salmon. No. 8 is a native taking a skin of one of the dead animals, while Nos. 9 and 10 are also going to join in carrying venison, as shown by Nos. 11 and 12. The dog between the two last named seems to scent the meat. No. 13 is engaged in cutting up an animal, the cut in the abdomen being shown by two parallel horizontal lines. Nos. 14 and 15 are dead deer, over which the native at the last named is busied. No. 16 is lying flat on his stomach, holding a gun, as beyond the hillock, No. 17, he sees a herd of deer, some grazing and some lying upon the ground. The rack at 18 is where he had a camp at a former time, showing the locality to have been visited before.

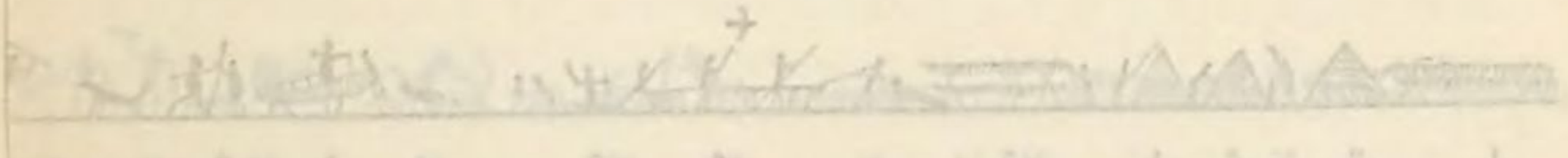
The entire village appears to have turned out, as shown in plate 67, fig. 3, to aid in dragging ashore a whale, No. 1. Lines extend to either side, where groups of men are dragging at them, No. 2. The figures on the animal are cutting off pieces, one at the left or head end having raised a long slice of blubber or skin, while at the other end one of the

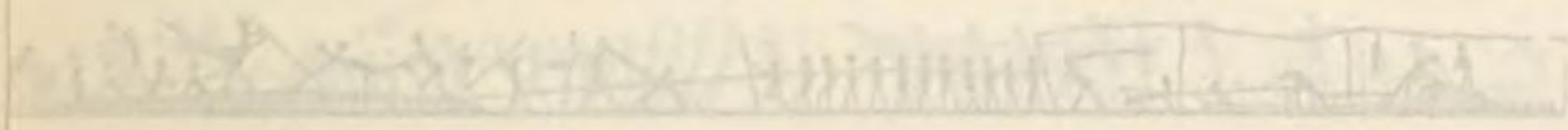


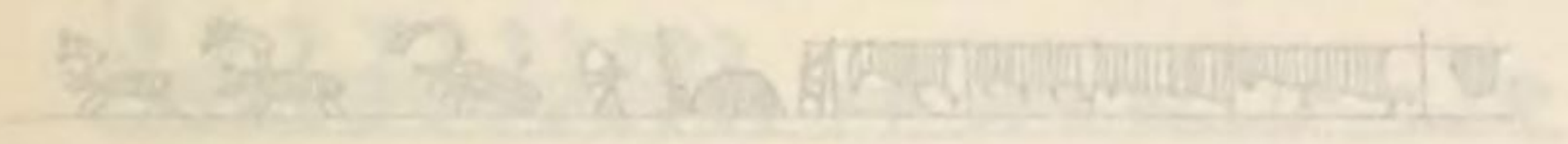
3

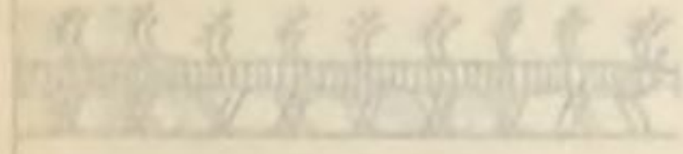
RECORDS ON IVORY AND BONE.

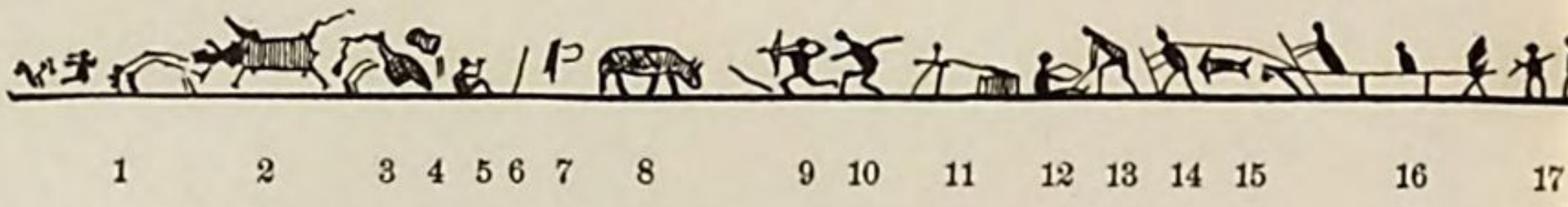








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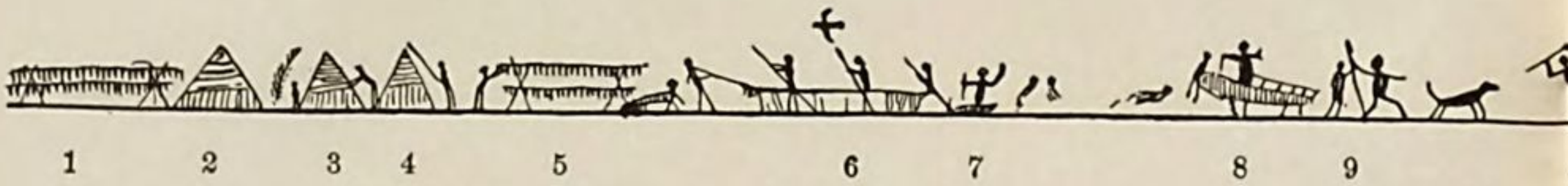
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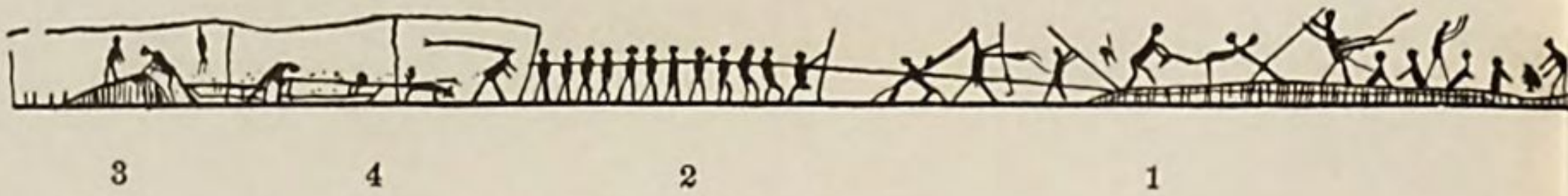
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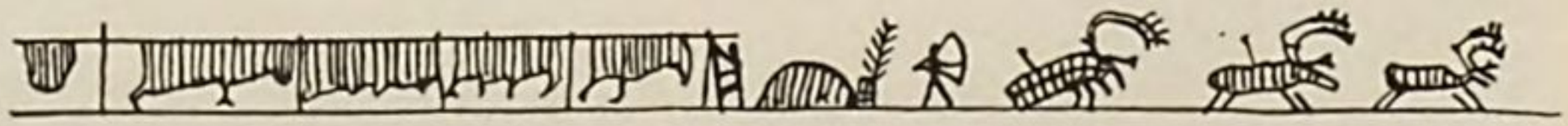

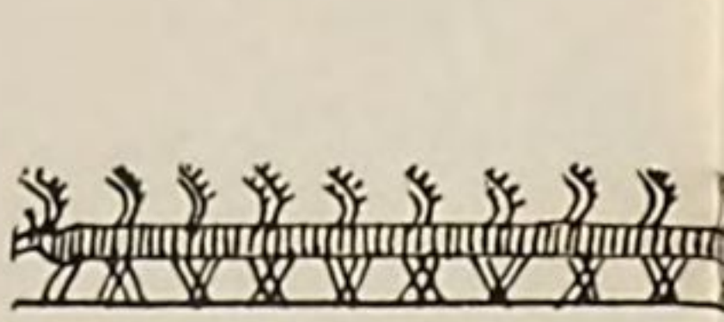

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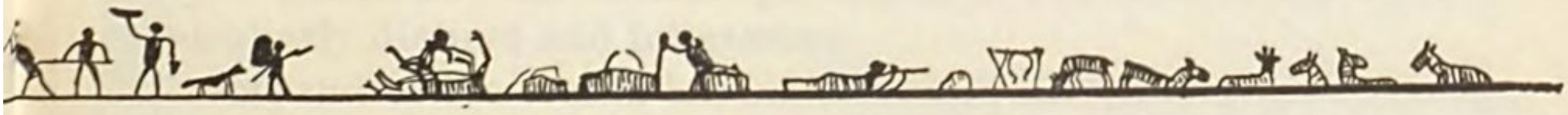

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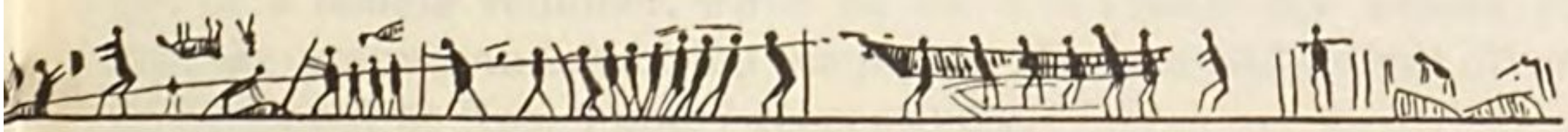

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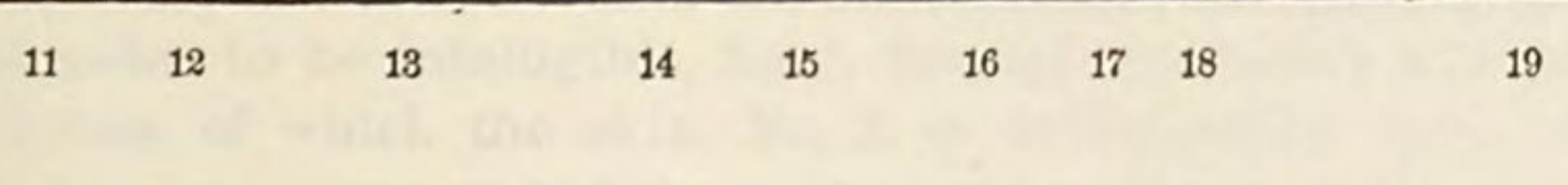

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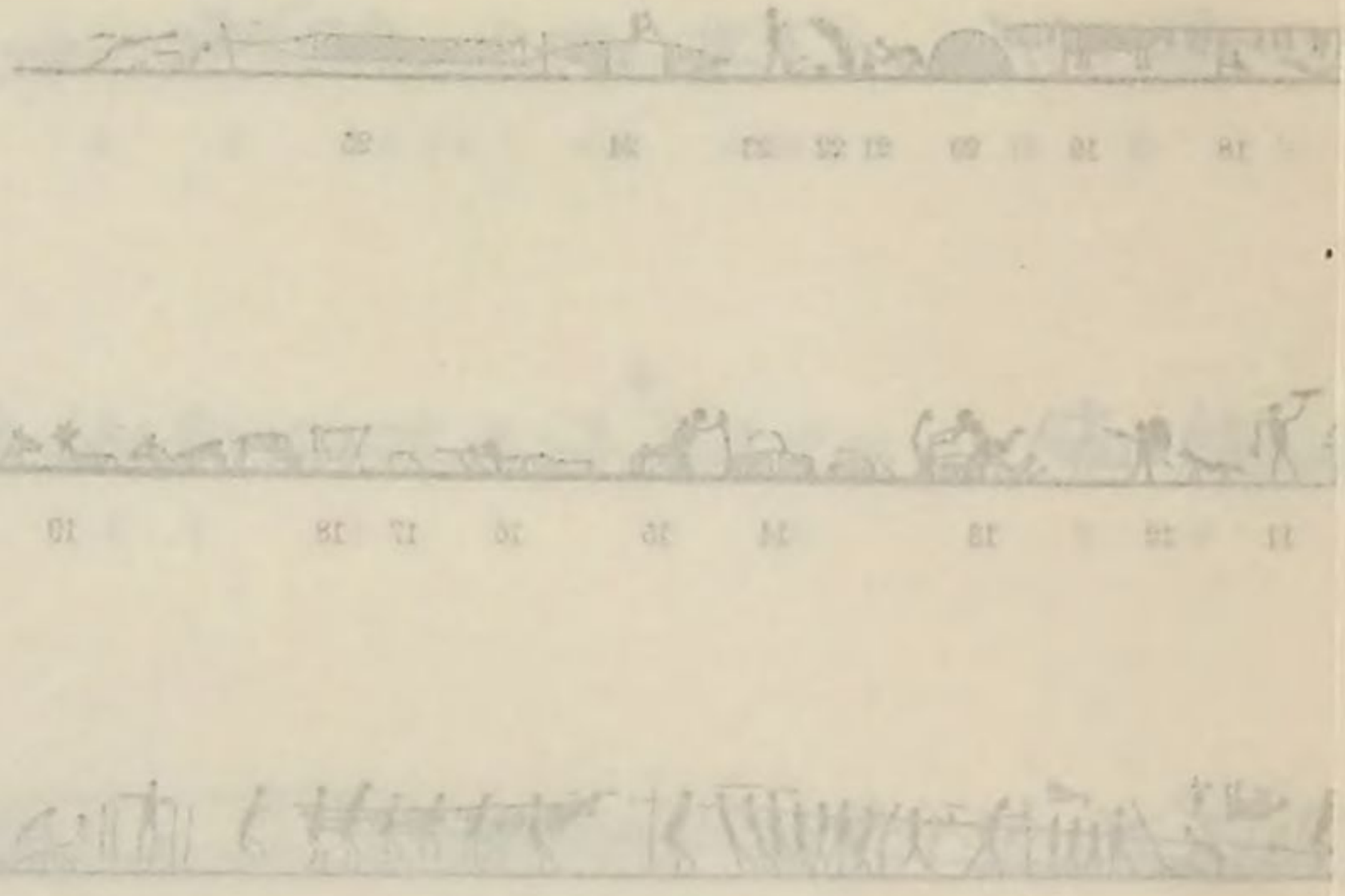
5

DAILY AVOCATIONS.



men is receiving a piece from another; while still another, nearer the tail, is tossing a piece of the meat to a companion, whose arms are stretched out to receive it.

Still another pair of natives are occupied with a large piece lying upon the ground. At No. 3 is a habitation, and at No. 4 the man is getting ready his sledges to haul the meat back to the house, where the long vertical ridge poles indicate that the meat is to be suspended from them. The natives at Nos. 6 and 7 are also in the attitude of some occupation in anticipation of having meat to hang up at the scaffold at No. 6.

The inverted quadruped near the middle of the record, and above the rope, pertains to a record which was to rest upon the base line, on the upper surface of the same side, but which was not undertaken.

The men at No. 5 are apparently using sledge runners upon which to drag their umiak to the shore, so as to approach the whale from the water side to assist in cutting him to pieces.

Plate 67, fig. 3, represents a number of different avocations connected with the chase, and the artistic portrayal of the actions represented are peculiarly distinct and interesting.

The left end of the record is somewhat marred by wear, but the first character to be intelligible, No. 1, denotes the horns of a slaughtered reindeer, of which the skin, No. 2, is outstretched upon the ground. At No. 3 are represented the horns and forelegs of the animal, which have been dressed for transportation to the village. At No. 4 is the skin of a female reindeer, while at No. 5 is visible the hunter seated upon the ground and smoking his pipe. His gun and quiver of arrows are indicated at Nos. 6 and 7 respectively.

No. 8 denotes a bear which has been captured by the same hunter, whose figure is reproduced, and his companion. No. 11 represents a man engaged upon the section of a temporary shelter, while the individual at No. 12 is using a drill bow to rotate the stick, held by No. 13, in the act of making fire. Nos. 14 and 16 represent a boat's crew who landed at the camp or shelter just named. The first of the figures is dragging the boat along shore, the one in the stern aiding in poling. No. 15 is the figure of a fish to indicate the purpose for which the party is away from their own home.

At No. 17 is shown a man hanging meat upon the rack for drying, the strips of meat being visible the entire length of the horizontal pole to 19, which is the skin of a reindeer. The duties of No. 18 are not apparent, but he was evidently helping in the work of suspending pieces of meat. No. 20 is a winter habitation, before which is one of the inmates, No. 21, engaged in preparing food, or something that requires stirring. Before him is observed rising a column of smoke, No. 22, while at No. 22 is another kettle belonging to No. 23, who is also, apparently, going to assist in the culinary work. No. 24 is a canoe lying upon its side, so as to dry the bottom, and behind it is seen the owner engaged in cleaning and repairing the side.

The elongated figure at No. 25 is a fish net stretched out for drying. Other characters appear to have been made farther toward the right, but from use of the rod the surface has been worn so smooth as to obliterate them.

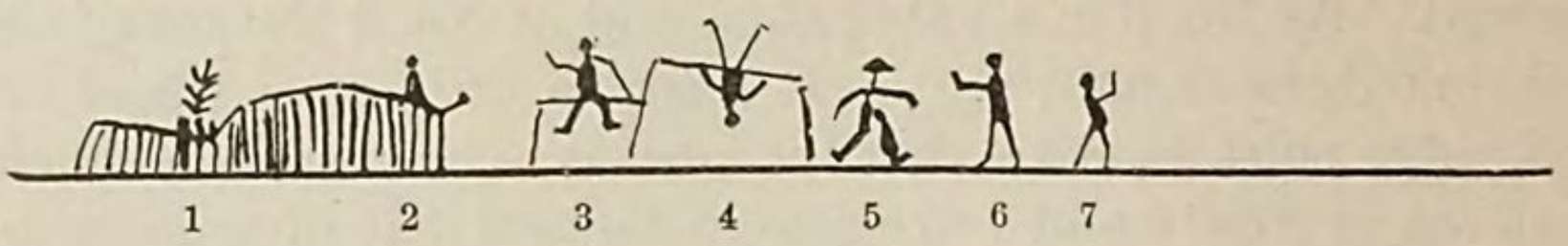


Fig. 80.

ESKIMO ATHLETIC SPORTS.

The etchings reproduced in plate 67, fig. 4, were copied from an ivory rod in the collection of the Alaska Commercial Company, and were interpreted by Vladimir Naomoff, a Kadiak half-caste referred to elsewhere. The left-hand figure represents a long rack from which a native has suspended reindeer hides, the person being portrayed at the right as in the act of descending from a short ladder. The dome-shaped figure is a habitation, before the door of which is a square figure—perhaps a kettle—from which smoke is arising. A native is next drawn in the act of shooting a reindeer, the arrows being shown as if sticking in its back. The continuous body with eleven pairs of horns indicates that number of animals. To the right are several reindeer down upon the ground, two having been shot with arrows, the native being again shown in the act of shooting toward a herd of ten reindeer, wounding one which afterwards attacked him, and which he caught by the horns, as shown at the extreme right end of the record.

Fig. 81.

NATIVE ATHLETE.

The figure of the habitation No. 1, shown in accompanying illustration fig. 80, has above it at the left a character resembling a cedar tree, but which denotes smoke. This resembles also the character to denote spray or water as spouted by whales, illustrations of which are found elsewhere.

Fig. 82.

NATIVE MAKING A BOW.

The individual seated over the entrance to the habitation, No. 2, is watching the amusements going on a short distance before him. Nos. 3 and 4 have made use of the fishrack poles for horizontal bars, and while No. 3 is astride of his and gesturing with his conversation with No. 2, No. 4 is making a turn.

The person indicated in No. 5 is preparing to run, the two remaining figures in Nos. 6 and 7 acting, perhaps, as coachers.

Fig. 81, taken from the engravings on the ivory pipestem represented in plate 61, shows a native in the act of standing upon his head or taking a somersault. The representation is unique, and nothing approaching this kind of athletic sport has been elsewhere found upon the specimens in the collection.

The seated figure in fig. 82 is holding with one hand a piece of wood

from which he intends to make a bow; the other hand holding an adz with which the greater part of the superfluous material is removed ere beginning the final cuts and scrapings to produce the ultimate form on surface.

The illustration of two men wrestling is reproduced in fig. 83 from the pipestems shown in plate 62. The attitude of the men is realistic, and shows the clinch in a "catch-as-catch-can" contest.

Fig. 83.
NATIVES WRESTLING.

This, fig. 84, is also reproduced from the same prolific source, the pipestem, shown in plate 61. The man at the right has kicked the ball into the air, while his companion is ready to catch it, as is shown by the outstretched hands.

Two men engaged in gambling are shown in fig. 85. That they are sitting close together is indicated not only by their apparent proximity but furthermore by the representation of the foot of one man extending beyond the back of his vis-a-vis.

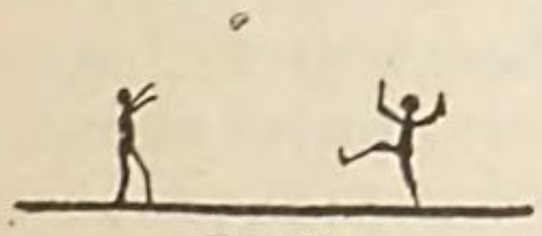


Fig. 84.
FOOTBALL KICKED BY NATIVE.

Whether the game is played with cards, with sticks, or some other materials, is not determinable.

The illustration in fig. 86 is not of uncommon occurrence in records of dances, those so indicated being the observers and not the participants in the ceremonials. The pipe represented in the native drawing is the Siberian pattern, an Eskimo reproduction of the general type being shown in plates 61 and 62, in which the bowl is a vertical stem with a broad, rather flaring top with but a narrow and deep perforation, resembling the Chinese pattern in respect to the small quantity of tobacco which the smoker can consume at one filling.

Fig. 85.
NATIVES GAMBLING.

The effect is attained, however, as Mr. Murdoch informs me "that the smoker will take a deep inhalation of smoke—and vile smoke it is, generally—retaining it for a considerable time until he is compelled to take breath, when another similar inhalation of smoke is taken. This is repeated until the small charge of tobacco is consumed. The result is a most violent fit of coughing, becoming spasmodic and of such apparently painful character as to lead one to believe that the poor victim is going to die at once."

Fig. 86.
NATIVE SMOKING PIPE.

Many of the Indian tribes practice like inhalations of smoke, the usual combination among the Dakota tribes consisting of various kinds of purchased tobacco mixed in varying degrees with the inner red bark of the red osier *Cornus stolonifera*, or the leaves of Uva Ursi, found along the elevated lands of the upper Missouri and Yellowstone rivers.

The bark or the leaves are chopped up finely in the proportion,

usually, of two to one of tobacco, rubbed together in the palm of the hand and packed into the deep, narrow tube of the Catlinite pipe.

The outer or dry part of the lips only are placed against the pipe-stem, and the moment a deep long pull is taken the outer corners of the mouth are slightly opened, without removing the lips from the tip, and a deep breath taken in order that as the air enters the mouth some of the smoke held therein passes along down the trachea into the bronchial tubes, entirely filling the lungs. The expiration is performed by expelling the smoke through the nostrils, at the conclusion of which another deep draw at the stem followed by a like inhalation, this being continued with the regularity of ordinary breathing, at each inspiration smoke passing along with the air into the lungs.

Fig. 87.

DANCE.

Frequent coughing spells result and bronchial troubles are very common among the males. The opportunities for close observation were especially good during the writer's detail as surgeon at a military station at a time when the number of Indians upon the ration roll was 13,500, and personal experience was abundant also, both in the method of making and the acquirement of a severe attack of bronchitis, though of but limited duration.

The group represented in fig. 87 is actively engaged in a dance, the various attitudes indicating considerable exertion. The seated figure is holding aloft his shaman tambourine drum, the stroke across the disk indicating the stick with which he produces the percussion.

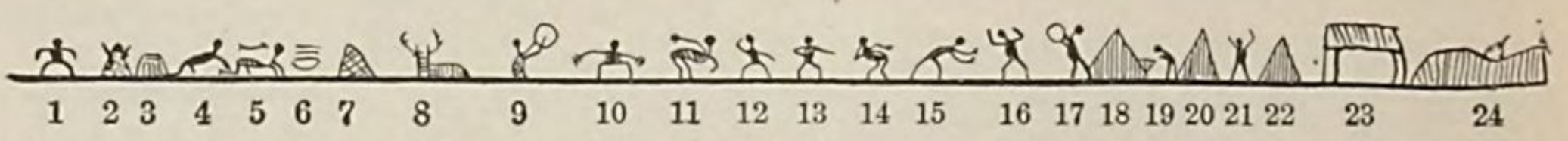


Fig. 88.

DANCE AND FEAST.

The larger figure at the right is the chief officiating personage, and is engaged in chanting. One hand is directed toward the drummer, while the other is held aloft, in the act of supplicating aid from his daimon or guardian spirit.

Fig. 88 is one of the very few illustrations of dances, and is perhaps the only one that seems to be of a social character, in consequence of a successful hunt.

No. 1 is a man making the gesture for *here, at this place*, having reference to the village of which he is an inhabitant and of which the houses are, in part, shown in Nos. 18, 20, 22, 24, and the storehouse, No. 23. No. 2 is obliterated, and although it appears to resemble a human figure, it is more probably a peak, similar to the ones shown in Nos. 3 and 7. Nos. 4 and 5 are the hunters who, in the shelter of the hill No. 7, are crawling up to within shooting distance of the deer,

resting upon the ground at No. 8. No. 6 denotes a bow and two arrows, while another arrow, carried by the rear hunter, is shown above and between the two figures.

The next portion of the record pertains to the feast given at the dance, the latter being graphically portrayed in Nos. 9–17. The drummers are indicated at either end of the group of dancers, the one at No. 9 being seated upon the ground. Nos. 10 and 11 are rather more violent in their attitudes than Nos. 12 and 13. No. 12 is shown with the right hand to the mouth to denote the gesture to eat, while with his left he is pointing in the direction of the feast awaiting them. No. 13 is indicating himself, and also points to the same place as No. 12, indicating that he too will be there. No. 14 is also shown as making the gesture to eat, eating, or food, while with the other hand thrown backward is pointing in the direction of the habitations. No. 15 seems to be acting in the manner of an usher, holding both hands toward the place of the food, as if inviting the others to go.

No. 16 is shown with his hands up, a common attitude given to persons portrayed as dancing or other excitement, such as surprise or alarm in hunting, etc., while No. 17 has risen from his place and is using the drum, similar to the one at No. 9. The summer habitations are shown in Nos. 18, 20, and 22, the persons indicated between them being members of the households near which they are represented.

No. 23 is a scaffold storehouse, while No. 24 denotes a winter or permanent habitation, with one of the inmates on the roof.

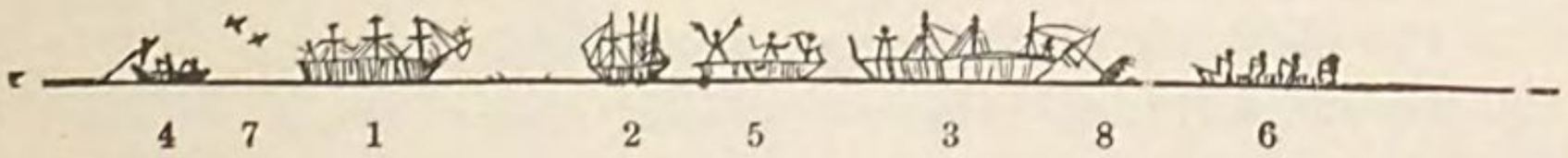


Fig. 89.

WHALING SHIPS AND BOATS, AND VISITING NATIVES.

In fig. 89 is portrayed an event which seems to have been of interest to the recorder, or owner of the record. Nos. 1, 2, and 3 are whaling ships; from No. 2 is observed a feather-like figure rising from the deck, between the main mast and mizzenmast, which denotes smoke rising from the fire used for boiling blubber. At No. 3 the line is secured to walrus, which is being hauled aboard.

Nos. 4 and 6 represent ships' boats, while No. 5 is a native canoe, the recorder being indicated at the stem of No. 5, in the act of making a gesture with his left hand, and pointing with his right toward the direction of the ship No. 1, upon which are two men, the one upon the bowsprit of which is returning a gesture sign.

The man at the stern of the last-named ship is also making a hailing sign to the canoe men at No. 4.

The two crosses at No. 7 are birds, while No. 8 is the walrus which has been secured by the crew of ship No. 3.

In fig. 90, Nos. 1, 2, and 3 represent whaling ships at anchor, the middle figure being somewhat obliterated by the wearing away of the

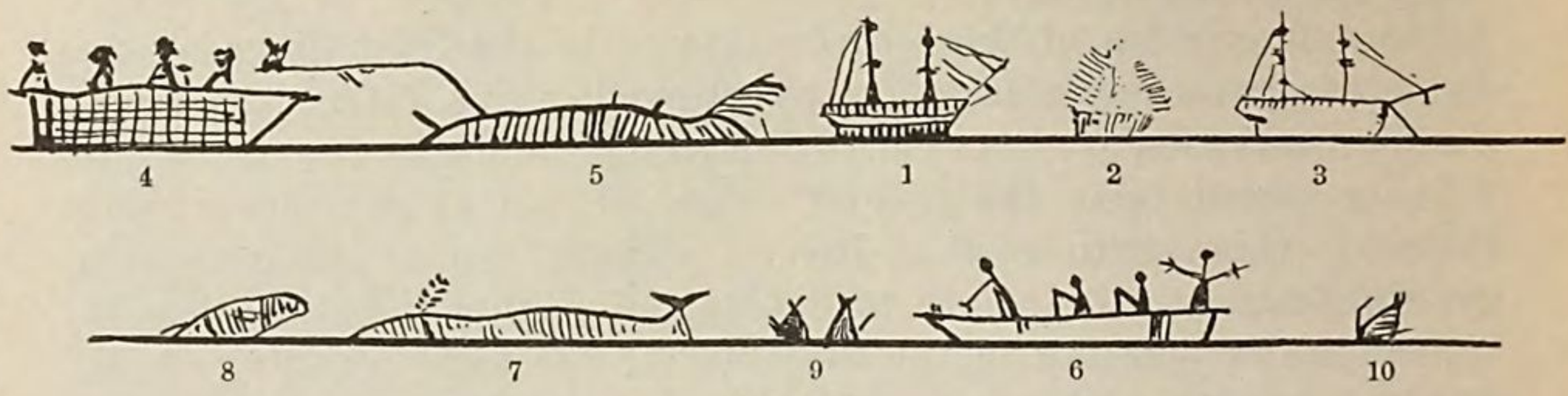


Fig. 90.

WHALEHUNTERS AND SHIPS.

ivory of the bow. The anchor chain is seen at No. 3. Nos. 4 and 6 are the ships' boats in pursuit of whales, the specimen at No. 5 having been harpooned, while in No. 6 the hunter is reaching down to grasp the harpoon, the open hand being clearly indicated. No. 8 is a killer whale, while Nos. 9 and 10 denote seals diving into the sea.

PICTOGRAPHIC RECORDS.

This collection of records pertains more particularly to individual exploits—hunting and fishing, traveling and combat. It is practically impossible to classify all of the records or to relegate them to a specific subject, as the subjects are frequently not on one single theme, but embrace a number of ideas upon the same continuous face of ivory; therefore the records are necessarily classified according to the import of the majority of characters inscribed.

In the accompanying series presented below there appears to be more allusion to individual performances than the record of an indefinite number of people.

INDIVIDUAL EXPLOITS.

The carving shown in fig. 91, made of a piece of walrus ivory, was copied from the original in the Alaska Commercial Company, San Francisco, California, and the interpretations were verified by Vladimir Naomoff, a Kadiak half-breed, to whom reference has already been made.

No. 1 is a native whose left hand is resting against the house, while the right is directed toward the ground. The character to his right represents a "shaman stick" surmounted by the emblem of a bird—a "good spirit"—in memory of some departed member of the household. It was suggested that the grave stick had been erected to the memory of his wife.

No. 2 represents a reindeer.

No. 3 signifies that one man, the designer, shot and killed another with an arrow. The elbow of the arm drawing the arrow is seen projecting behind the back, illustrating close observation on the part of the artist.

No. 4 denotes that the narrator has made trading expeditions with a dog sledge.

No. 5 is a sailboat, although the elevated paddle signifies that that was the manner in which the voyage was best made. The conspicuous and abrupt stem specifies that it was a heavy boat, for use in sailing, and not a baidarka.

No. 6 represents a dog sled, with the animal hitched up for a journey. The radiating lines in the left-hand upper corner of the square containing the pictograph are the rays of the sun.

No. 7 is a sacred or ceremonial structure. The four figures at the outer corners of the square represent the young men placed on guard, armed with bows and arrows, to keep away those not members of the band, who are depicted as holding a dance. The small square in the center of the inclosure represents the fireplace. The angular lines

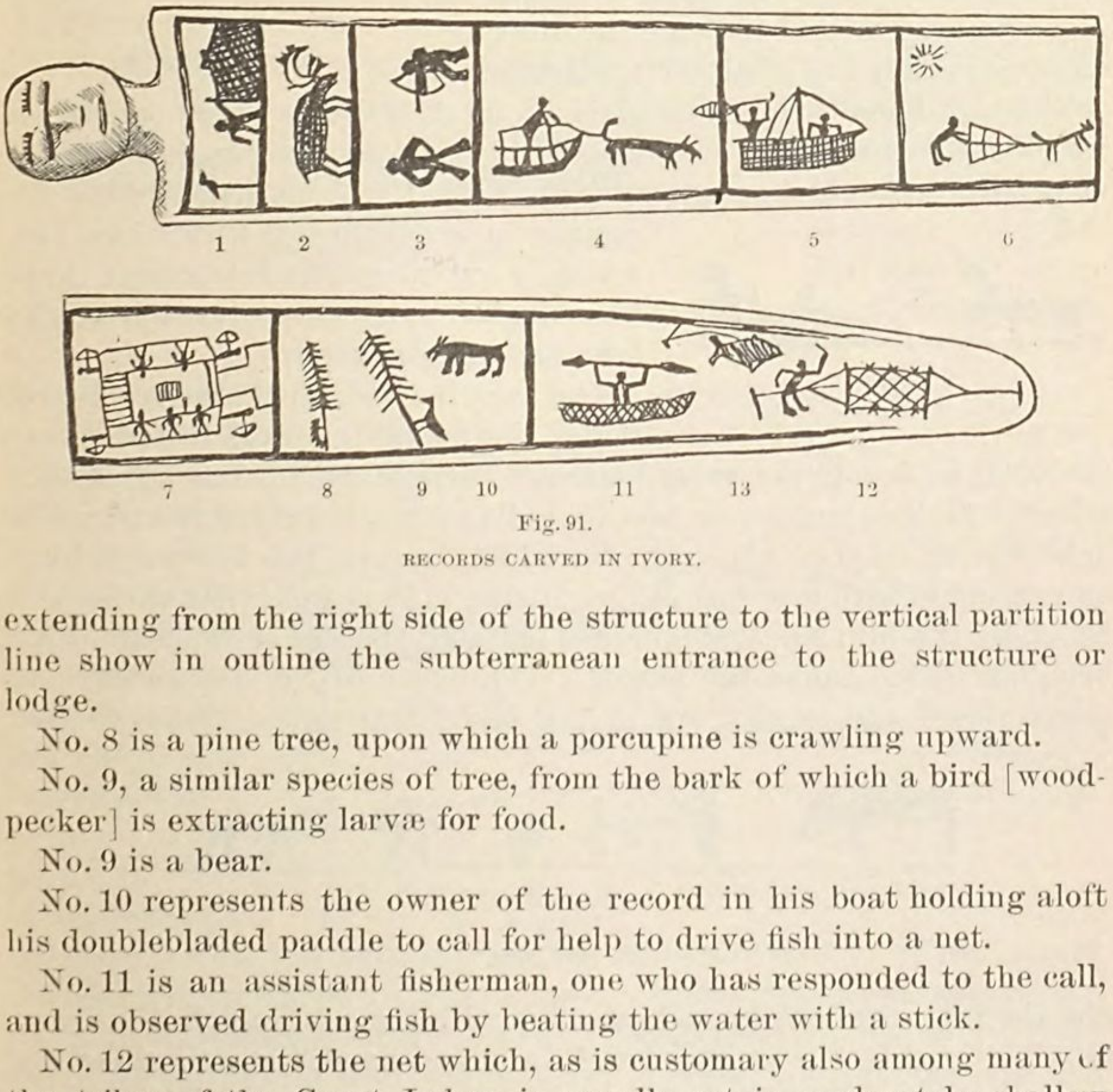


Fig. 91.

RECORDS CARVED IN IVORY.

extending from the right side of the structure to the vertical partition line show in outline the subterranean entrance to the structure or lodge.

No. 8 is a pine tree, upon which a porcupine is crawling upward.

No. 9, a similar species of tree, from the bark of which a bird [woodpecker] is extracting larvæ for food.

No. 9 is a bear.

No. 10 represents the owner of the record in his boat holding aloft his doublebladed paddle to call for help to drive fish into a net.

No. 11 is an assistant fisherman, one who has responded to the call, and is observed driving fish by beating the water with a stick.

No. 12 represents the net which, as is customary also among many of the tribes of the Great Lakes, is usually set in moderately shallow water.

No. 13, the figure over the preceding character, denotes a whale, with line and harpoon attached, which was caught by the fisherman during one of his fishing trips.

A man in a kneeling posture, about to throw a spear at an animal, is shown in fig. 92. The attitude is lifelike and the sketch well made.

Fig. 92.
THROWING HARPOON.

An illustration of shooting a reindeer is shown in fig. 93. The man is lying upon the ground and is using a gun instead of a bow and arrow.

The illustration given in fig. 94 is a remarkably clever bit of engraving, especially in the attitude assumed by the native in drawing the bow. The arrow has already been discharged and is on its message of death, but a short distance from the head of the animal. Immediately in front of the hunter is a mound upon which is a tree, behind which the hunter approached to within shooting distance. The animal is drawn facing the hunter to indicate the fact that it was secured.

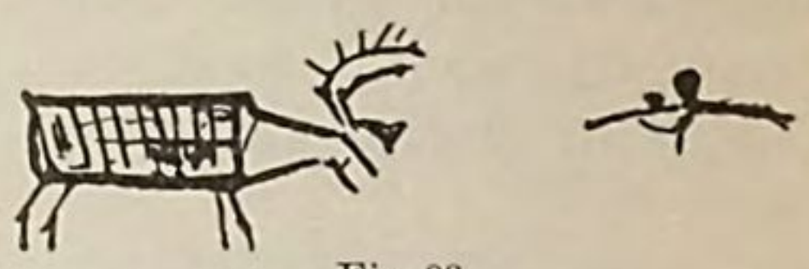


Fig. 93.
SHOOTING REINDEER.

The flatness and absence of markings upon the mound indicate the difference between it and a winter habitation.

The bag handle shown on plate 58, fig. 2, presents three panels, on which are portrayals of natural objects. The separating lines consist of pairs of vertical zigzag markings, while the front panel bears the figure of a hunter armed with a bow and arrow in pursuit of reindeer, one of these animals being indicated in each of the two remaining panels.

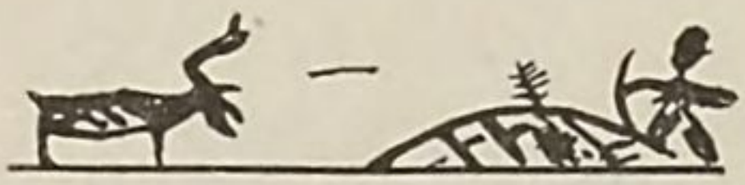


Fig. 94.
HUNTER SHOOTING REINDEER.

The two individual characters represented in fig. 95 as Nos. 3 and 5 are intended to denote the same person. The one, as No. 3, is the hunter armed with bow and arrow, and by hiding himself behind the tree, No. 2, he was enabled to shoot the buck, No. 1, when the latter had kept on grazing to within proper range. Being hidden from view of the doe, No. 6, by the hill, No. 4, the hunter imitated the call of the male, thus bringing within range the female. The figure in No. 5 represents, as above stated, the hunter, but in this additional form in order to give

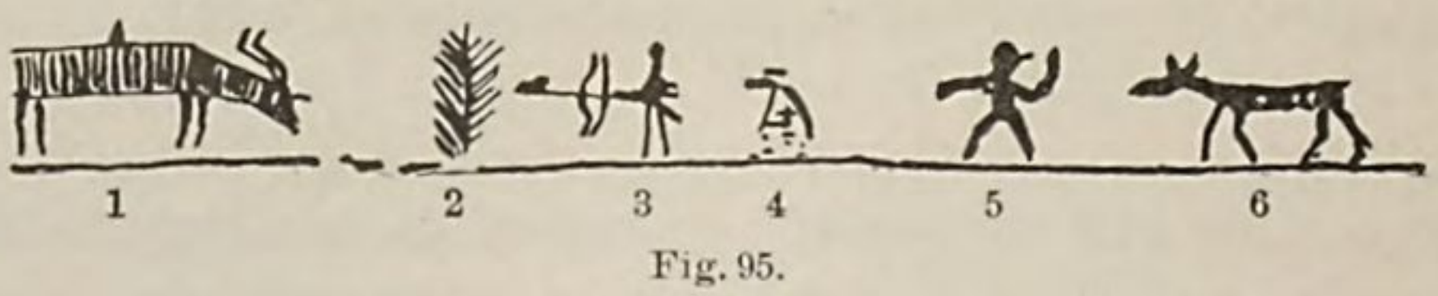


Fig. 95.
HUNTING DEER.

him the gesture of calling or beckoning with the left hand, in the direction indicated by the extended right arm and hand, the attitude of the animal also showing that it followed. The hunter has projecting from his mouth a short black line, denoting voice, produced by whistling or a decoy whistle.

The sketch shown in fig. 96 is of interest on account of the indication shown by the artist that the reindeer is wounded and can not

escape being shot by the hunter. The animal is placed in an attitude as if backing, the legs drawn so as to project slightly to the front to denote its inability to progress in that direction.

The short line in the hand of the middle hunter is an arrow, which is being held toward the one shooting. The figure at the left is quietly observing the scene, smoking his pipe.

Fig. 96.

HUNTERS AFTER A REINDEER.

A clever and cleanly cut illustration is reproduced in fig. 97, representing a hunter in his baidarka, paddling toward an ice pan upon which is quietly reposing a walrus.

All the figures are heavily incised by vertical lines, the ice alone remaining as a hollow outline to indicate its transparent or translucent condition.

The illustration of the two sides of a piece of ivory, fig. 98, is from Utkiawiñ, in the Point Barrow region of Alaska, and is described by Mr. Murdoch[1] as being a piece of an old snow-shovel edge with freshly incised figures on both faces, which the artist said represented his own record. "The figures are all colored with red ocher. On the obverse the figures all stand on a roughly drawn ground line. At the left is a man pointing his rifle at a bear, which stands on its hind legs facing him. Then comes a she-bear walking toward the left, followed by a cub, then two large bears also walking to the left, and a she-bear in the same attitude, followed by two cubs, one behind the other. This was explained by the artist as follows: 'These are all the bears I have killed. This one alone (pointing to the "rampant" one) was bad. All the others were good.' We heard at the time of his giving the death shot to the last bear as it was charging his comrade, who had wounded it with his muzzle-loader. On the reverse the figures are in the same position. The same man points his rifle at a string of three wolves. His explanation was: 'These are all the wolves I have killed.'"

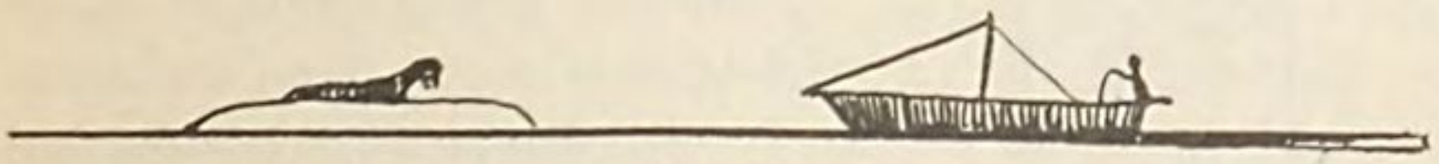


Fig. 97.

HUNTER APPROACHING WALRUS.

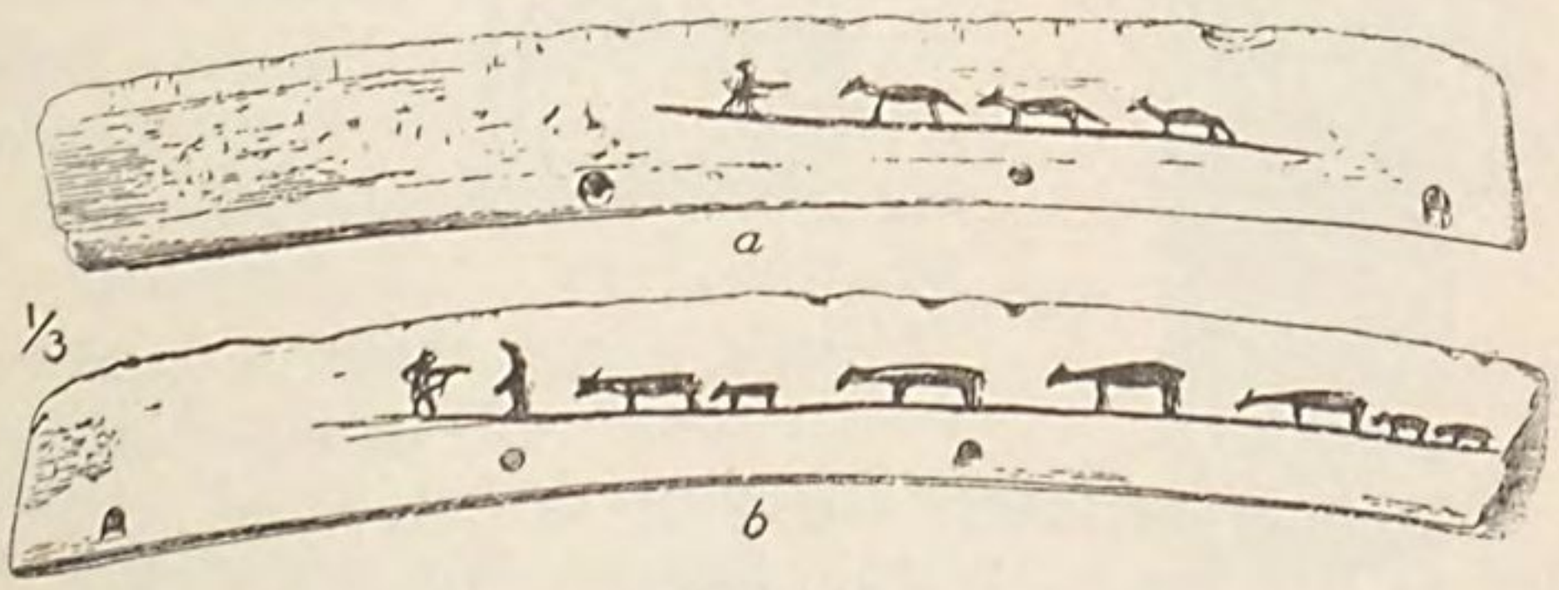


Fig. 98.

HUNTING SCORE ENGRAVED ON IVORY. (AFTER MURDOCH.)

[1] Ninth Annual Report of the Bureau of Ethnology, 1887–'88, 1892, p. 362.

Plate 59, fig. 3, shows a drill bow from Norton Sound. The ornamentation upon one side consists of eleven wolves, while on the other side is represented a herd of reindeer, the herd being divided into two parts, between which is shown the figure of a wolf.

It may be that the above instance records the fact of the owner being a successful hunter, and thus records a successful exploit, though the uniformity in outline of the animals suggests a tendency also toward ornamentation as well as portraying an occurrence.

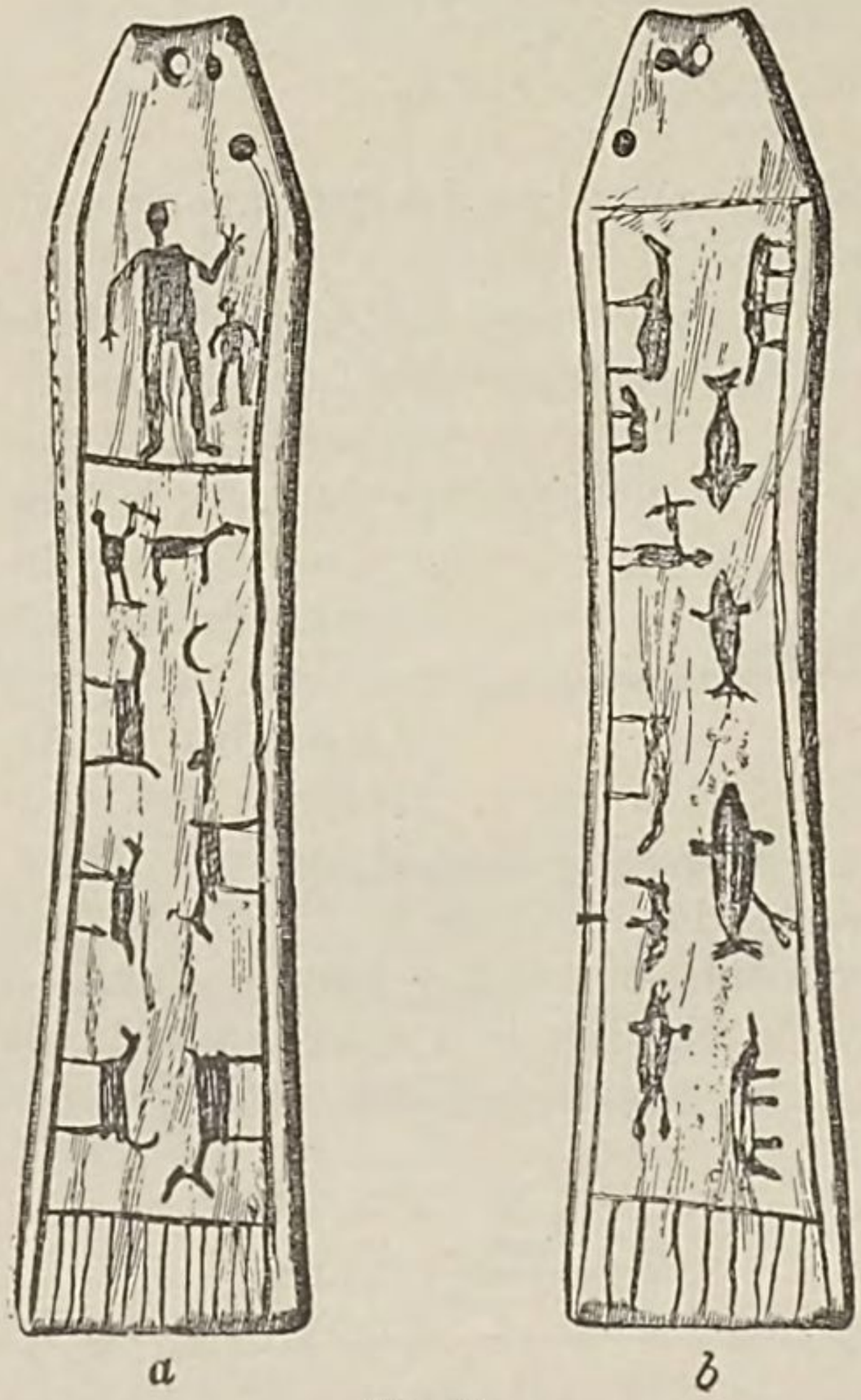


Fig. 99.

HUNTING SCORE ENGRAVED ON IVORY (AFTER MURDOCH).

The fungus-ash box shown on plate 56, fig. 5, shows along the upperline of illustrations a hunter with throwing stick and weapon running after some birds which he is desirous of securing.

Upon the lower line the same person, perhaps, is shown behind a sledge riding his dog in pulling the conveyance.

When the box is reversed, there will be seen upon the upper line a clump of trees at the right, while to the left of these is a hunter kneeling in the attitude of shooting at a bear; behind the latter is another animal, perhaps a mate.

Upon the lower line is a ship, toward which two native boats are directed. The face at the left is apparently simply an attempt at caricature.

The hunting tablet found by Mr. Murdoch at Point Barrow, and before referred to, is represented in plate 65, fig. 1. The description given by him is in connection with the illustration given on plate 56, fig. 1, referring to the reverse of the tablet.

The accompanying illustration, fig. 99, and description is from Murdoch's report on the Point Barrow Eskimo,[1] and appears to be one of the four specimens brought back by him. The tablet is of ivory, 4.8 inches long and 1 inch wide. On each face is an ornamental border inclosing a number of incised figures, which probably represent actual scenes, as the tablet is not new.

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[1] Ninth Annual Report of the Bureau of Ethnology, 1887–88, 1892, p. 361 et seq.

Mr. Murdoch says:

The figures on the obverse face are colored with red ocher. At the upper end, standing on a cross line, with his head toward the end, is a rudely drawn man holding his right hand up and his left down, with the fingers outspread. At his left stands a boy with both hands down. These figures probably represent the hunter and his son. Just below the cross line is a man raising a spear to strike an animal which is perhaps meant for a reindeer without horns. Three deer, also without horns, stand with their feet on one border with their heads toward the upper end, and on the other border near the end are two bucks with large antlers heading the other way, and behind them a man in a kaiak. Between him and the animal which the first man is spearing is an object which may represent the crescent moon. The story may perhaps be freely translated as follows: "When the moon was young, the man and his son killed six reindeer, two of them bucks with large antlers. One they speared on land, the rest they chased with the kaiak."

On the reverse the figures and the border are colored black with soot. In the left-hand lower row is a she bear and her cub heading to the left, followed by a man who is about to shoot an arrow at them. Then come two more bears heading toward the right, and in the right-hand lower corner is a whale with two floats attached to him by a harpoon line. Above this is an umiak with four men in it approaching another whale which has already received one harpoon with its two floats. The harpoon which is to be thrust at him may be seen sticking out over the bow of the boat. Then come two whales in a line, one heading to the left and one to the right. In the left-hand upper corner is a figure which may represent a boat bottom up on the staging of four posts. We did not learn the actual history of this tablet, which was brought down for sale with a number of other things.

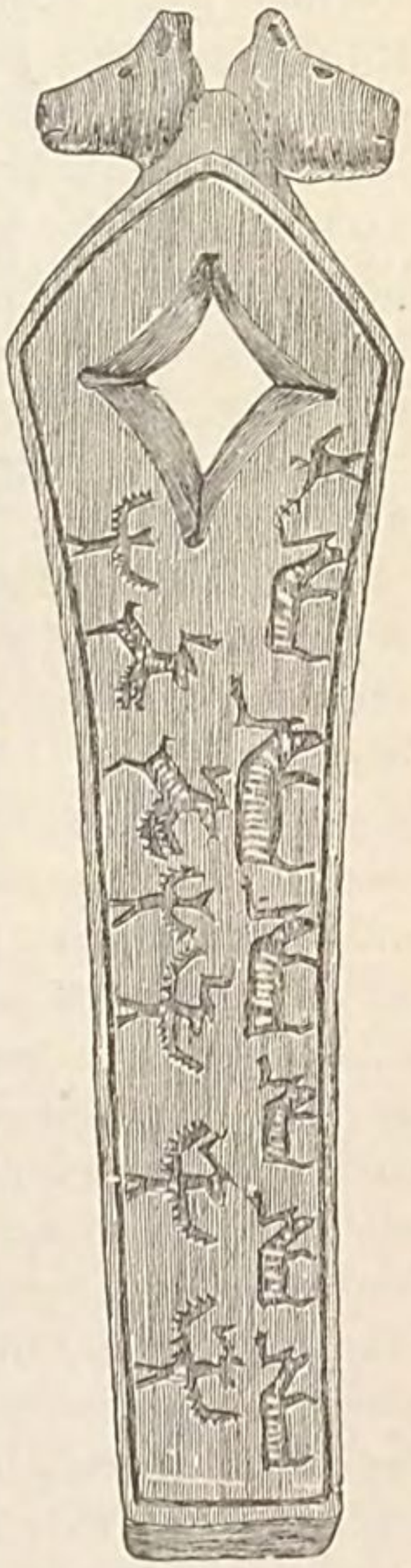

Fig. 100.

ARROW STRAIGHTENER.

Mr. W. Boyd Dawkins figures an arrow straightener of walrus ivory (fig. 100) which is almost an exact reproduction in form of that shown in plate 8, fig. 1. The latter is from the Diomede Islands, and bears the figure of a reindeer only. That shown by Mr. Dawkins bears along one edge a row of reindeer, while at the opposite margin of the same side a series of seven figures, five of which resemble the human form, each with antler and headdress, and outstretched arms, from the sleeves of which are suspended what appears to denote fringe—short serrations. Two figures are placed in profile and in that position more nearly resemble reindeer rampant, though the characters are evidently intended to represent the same idea as that expressed in the five preceding ones.[1]

Another illustration from the same work and author relates to a hunting scene, two natives being represented as in pursuit of two reindeer, one of which has been shot and is lying down.[2]

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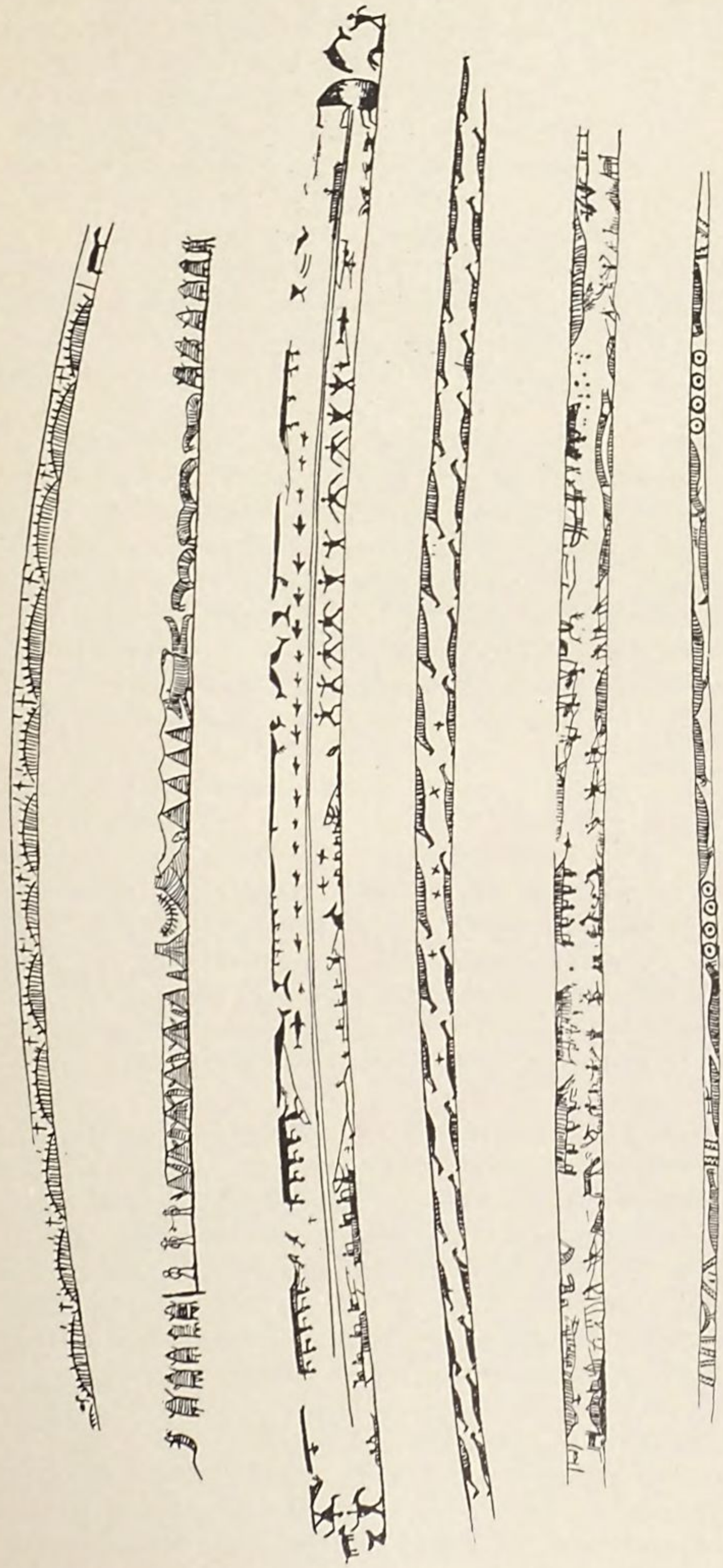
[1] Early Man in Britain. London, 1880, p. 238, fig. 92. [2] Iden , p. 239, fig. 93.

Plate 22, fig. 1, represents an ivory drill bow from Kotzebue Sound. The implement is 15 inches in length and seven-eighths of an inch in width. Besides being undulating the specimen is polished down at intervals of 2 inches in such a manner as to represent or produce slight constrictions, as will be observed from the illustration. It represents a hunting record, the hunter or owner of the specimen being shown at the left in the attitude of shooting at a bear, which animal is accompanied by seven others of the same species. Some of these are separated by vertical lines, thus forming partitions in the record. At the extreme right is another illustration of whale hunting, and to intelligently understand the engraving the bow must be turned around. The hunter is here represented in his kaiak, above which is an irregular circle connected with the whale by a sharply defined line. This represents a harpoon cord and the seal-skin float which is usually attached to impede the progress of the captive. The whale is represented with great accuracy. Above the outline of the kaiak will be seen a native drawing a bow, the arrow being directed forward toward a flock of geese, numbering seven, one preceding the other, in a very lifelike attitude.

Plate 68, fig. 2, shows an old and age-stained specimen of ivory, also representing a drill bow, from Kotzebue Sound. The under surface is the one represented in the illustration. At the extreme left are five bear skins and a long-tailed animal which may denote the otter. To the right of the vertical line—the line denoting the separation between two records—are engraved the figures of three white men, or perhaps only two, as the two are of the figures portrayed with the rimmed hats. One of these is handing a small object to his companion, whose hands appear to be stuck in his pockets. To the right of this individual are six cone-like objects connected at the apex by a continuous line, and between which are rude upright objects resembling columns of smoke. These are summer habitations, with probably indications of smoke from the camp fires. In the middle of the record are two cone-like structures, denoting mountains, between which is a semicircle deeply engraved with short lateral lines representing a conventional tree symbol with branches at either end and upon the sides. The signification of this appears to be that between two mountain regions occurs an abundance of timber. This method of portraying an abundance of anything is very similar to a common practice adopted by many of the Indian tribes of the United States, especially the Ojibwa and some of the Shoshonian tribes.[1] The four triangular figures to the right represent huts, while a continuous line extends from the mountain toward the right and connects with a man disguised in a wolf skin. The signification of this is not clear. It may denote the act of a shaman in such disguise approaching the habitations and extracting something therefrom, or he may intend harm to one of the occupants; or it may

[1]Compare with portrayal of mountains and adjoining marsh on the "Chuckche Year record," in plate 81, at fig. 26.



RECORDS ON IVORY RODS.

signify that in this disguise he was enabled to approach walruses and shoot them. This method of disguise was practiced by some of the prairie tribes of Indians west of the Mississippi River. Many shy animals may thus be approached to within shooting distance, while the human form would at once alarm them and cause them to escape. Three walruses are drawn upon the record, and as their heads are placed in the direction of the human figure, it is believed that this is intended to denote their capture by the hunter, this practice being very common. On the contrary, had they not been secured, their heads would have been placed in an opposite direction. At the extreme right are six bear skins upon the ground, in an upright position, very much resembling the conventionalized figures of skins shown in plate 22, fig. 3.

On the opposite side or upper curve of the bow is a very rare character; in fact, the only instance observed in the entire collection in the possession of the National Museum in which the pudendum is indicated.

This character was referred to in conversation with Mr. Murdoch, who questioned the writer with reference to its occurrence in pictographs from Point Barrow. At the time of the conversation the engraving had not yet been observed. The creature immediately to the right of this is a walrus which has been harpooned, as the projecting weapon illustrates, and through it is the flying harpoon line connecting it with the hunter in the bow of a fine large umiak occupied by seven hunters. The next character is an umiak hurrying to the right in pursuit of a whale, the harpoon having been thrown forward and apparently into the animal. The next figure is that of a human being with one hand to his head and the other to his groin, the sharply incised line extending downward from the middle of the abdomen. The signification of this is not clear. Further toward the right are the outlines of two kaiaks, the shapes of which are very graceful, while only one shows the presence of a hunter, the other being incomplete. The record is concluded upon this side of the bow by the figures of two walruses.

Upon one side are a number of walruses and other animals, while near the left is the portrayal of a whale, to which the harpoon line and float seems attached. Some short figures are introduced to fill up the space. On the remaining side we have at the extreme left a seine net, to the right of which are several animals not identifiable with certainty, as the engravings are very crude on this record. A number of walruses, a whale, and a man in a kaiak occupy the greater portion of the remaining part of the record, while a single triangular habitation is shown, together with two crudely drawn figures of wolves.

Plate 24, fig. 1, shows a drill bow from Cape Darby, where it was collected by Mr. E. W. Nelson. It is of ivory, and measures 13½ inches in length. It is a hunting record, the story beginning at the right hand. The hunter is shown with gun raised, directed toward a herd of

reindeer. Above fourteen of these animals will be observed black spots denoting bullets, and indicating that that number of animals were shot The remaining five have no such marks, which indicates that that number were with the herd, but were not secured. The peculiarity of this unique record is the indication of the bullets, each denoting capture of the game, whereas in most other records from the same region the indication of the capture of game consists in the heads of the animals being turned toward the hunter; those animals seen and not captured being turned in an opposite direction.

By reversing the bow so as to bring to proper view the small figures at the left-hand upper corner, the reader will perceive at the left an elevated storehouse, to the right of which is a small mound representing a winter habitation, while next to the right of this is another structure of similar character. The main figure portrayed has a thin line extending from himself to one of the reindeer of the preceding group, indicating that another hunter captured it by means of a lasso or rope.

On the under side of the bow is a seal-hunting scene. At the left are five kaiaks, four of the hunters being represented with the paddle

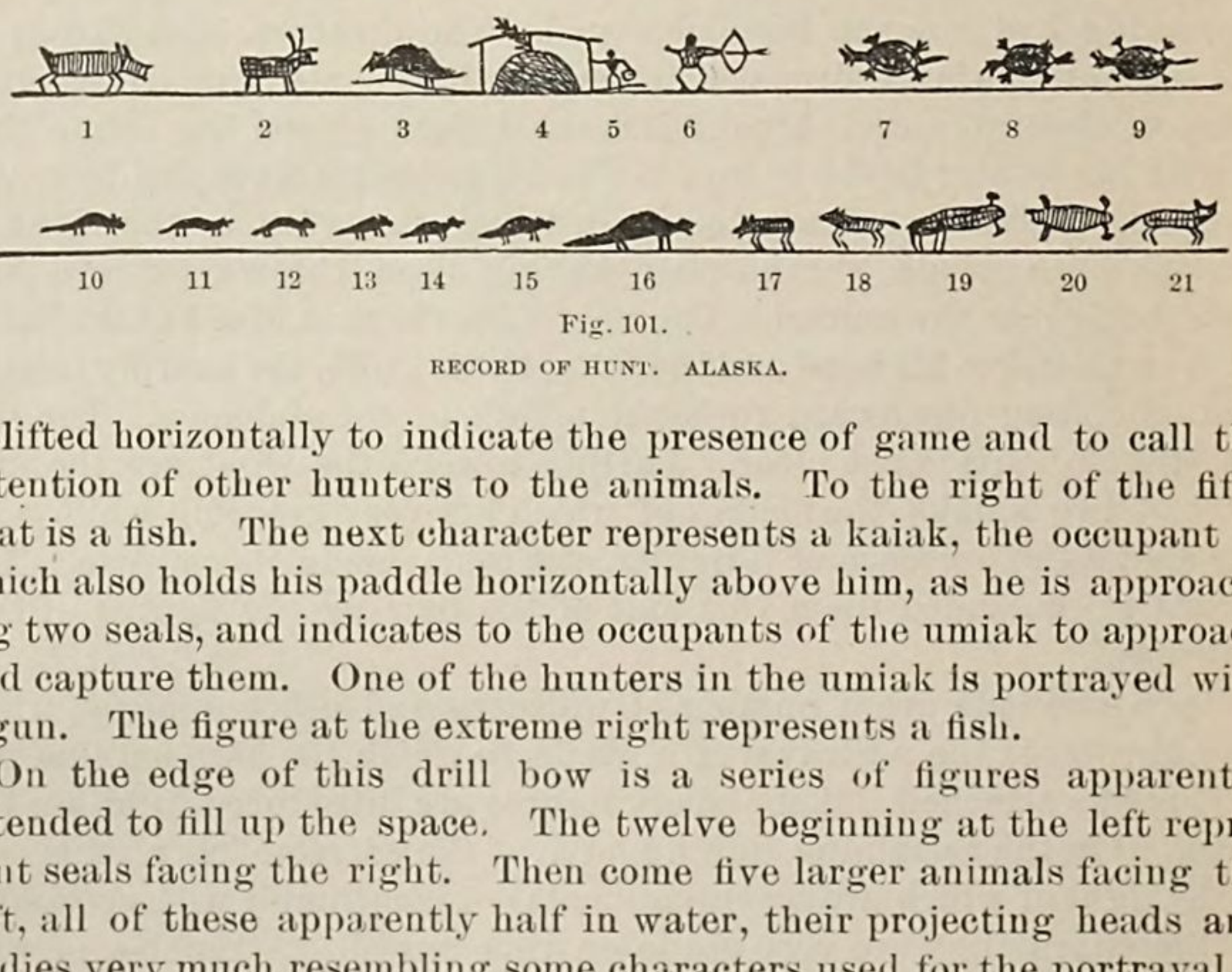


Fig. 101.

RECORD OF HUNT. ALASKA.

uplifted horizontally to indicate the presence of game and to call the attention of other hunters to the animals. To the right of the fifth boat is a fish. The next character represents a kaiak, the occupant of which also holds his paddle horizontally above him, as he is approaching two seals, and indicates to the occupants of the umiak to approach and capture them. One of the hunters in the umiak is portrayed with a gun. The figure at the extreme right represents a fish.

On the edge of this drill bow is a series of figures apparently intended to fill up the space. The twelve beginning at the left represent seals facing the right. Then come five larger animals facing the left, all of these apparently half in water, their projecting heads and bodies very much resembling some characters used for the portrayal of water fowl. The next character, which is T-shaped, is a conventionalized whale tail. The next character to the right is not sufficiently clear to admit of certain identification, but the next four represent deer. Beyond the vertical bar are sixteen rudely executed figures of seals.

Fig. 101 is a record of a hunting expedition, reproduced from an ivory drill bow in the collection of the Alaska Commercial Company, San

Francisco, California. The animals secured by the hunter are shown, as well as those observed by him during the trip, but not secured.

Nos. 1 and 2 represent deer; No. 3 is the outline of a porcupine, next to which is the habitation of the hunter, No. 4. Smoke is seen issuing from the roof of the hut, while at the door is the hunter's wife with a vessel, No. 5. At No. 6 is the outline of the hunter himself in the attitude of shooting an arrow, thus indicating the weapon used by him. Nos. 7, 8, and 9 are beavers; Nos. 10, 11, 12, 13, and 14 are martens; No. 15 is a vessel, according to the interpretation given by Naomoff, although there are no specific characters to identify it different from

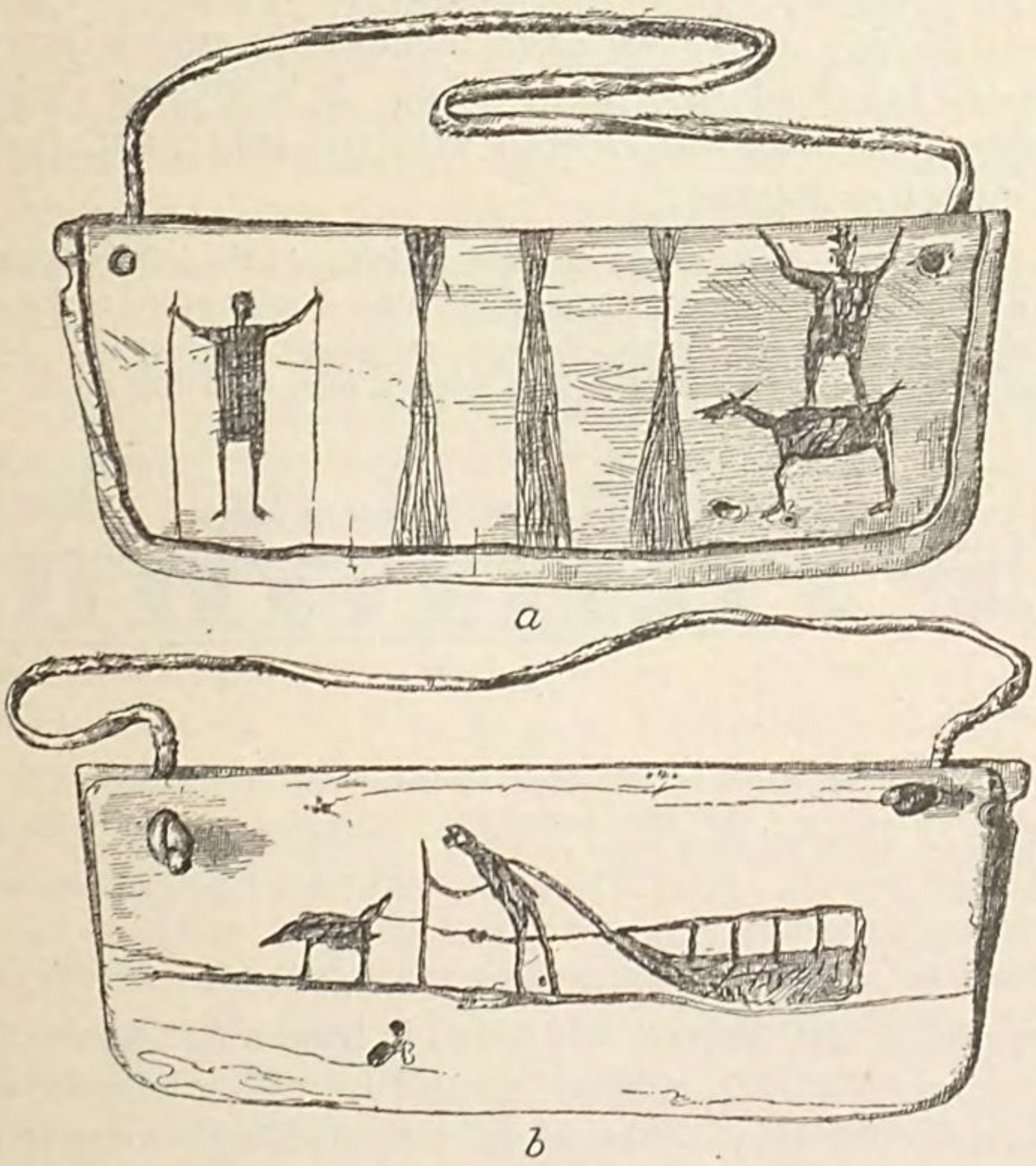


Fig. 102.

HUNTING SCORE ENGRAVED ON IVORY. (AFTER MURDOCK.)

the preceding; No. 16 is a land otter; No. 17 represents a bear, while No. 18 is a fox; No. 19 is a walrus, the tusks being perceptible at the left side; No. 20 is a seal, while No. 21 represents a wolf.

As above remarked, the animals are all indicated; those with the heads turned toward the hunter were secured, while those with the head turned away from him were observed, but not secured.

The story told by the pictograph, together with the text in the Kiateχamut dialect of the Innuit language, is as follows:

Hui′nuna′gra hui′puqtu′a picu′qulu′a mus′quli′qnut. pamu′qtulit′

I (from) my place (settlement) I went hunting (for) skins. Martens

taqi′mĕn, ami′daduk′ aχlaluk′, a′quia′mŭk piqu′a aχlaluk′;
five, weasel one, land otter caught one;
kuqu′lu′hunumuk′ aχlaluk′, tun′dumuk tú′guqli′ugu′ melu′ganuk′,
wolf one, deer (I) killed two,
pe′luk pinai′unuk, nu′nuk pit′quni′, maklak′muk pit′quni′,
beaver three, porcupine (I) caught none, seal (I) caught none,
atshi′anamuk′ pit′quni′, uaqi′lamuk′ pit′quni′, tagu′χamuk′
walrus (I) caught none, fox (I) caught none, bear
pit′quni′.
(I) caught none.

In the collection from Point Barrow is one example, of which an illustration is here reproduced in fig. 102. It is a piece of the edge of an old snow shovel, and measures 4.2 inches long, with a loop of thong at the upper edge to admit of suspension. It is covered on both sides with freshly incised figures, colored with red ocher, and is described by Mr. Murdoch as follows:[1]

The obverse is bordered with a single narrow line. At the left is a man standing with arms outstretched, supporting himself by two slender staffs as long as he is. In the middle are three rude figures of tents, very high and slender. At the right is a hornless reindeer heading to the left, with a man standing on its back with

1/3

Fig. 103.

HUNTING SCORE ENGRAVED ON IVORY. POINT BARROW. (AFTER MURDOCH.)

his legs straddled apart and his arms uplifted. On the reverse there is no border, but a single dog and a man who supports himself with a long staff are dragging an empty rail sledge toward the left.

I find no mention of the use of any such scores among the eastern Eskimo. * * *

The engraving represented in fig. 103 is from a flat piece of the outside of a walrus tusk 9.7 inches long and 1.8 wide at the broader end. The engravings are very crude, when compared with some of the work from the west coast of Alaska. The specimen is one of the four pieces brought back from Point Barrow by Mr. Murdoch, and the following is his description.[2]

The figures are incised on one face only and colored with red ocher. The face is divided lengthwise into two panels by a horizontal line. In the upper panel, at the left, is a man facing to the right and pointing a gun at a line of three standing deer, facing toward the left. Two are bucks and one a doe. Then come two bucks, represented without legs, as if swimming in the water, followed by a rude figure of a man in a kaiak. Below the line at the left is an umiak with five men and then a row of twelve conventionalized whales' tails, of which all but the first, second, and fifth are joined to the horizontal line by a short straight line. The record may be freely translated as follows: "I went out with my gun and killed three large

[1]Ninth Annual Report of the Bureau of Ethnology, 1887–88, 1892, pp. 363, 364, fig. 363.
[2]Idem, p. 362, 363.

reindeer, two bucks, and a doe. I also speared two large bucks in the water. My whaling crew have taken ten whales." The number of whales is open to suspicion, as they just fill up the board.

In the above description the author does not state, as he has done in another instance, that the interpretation was obtained from the native owner, and it may therefore be assumed that he ventures the interpretation himself. The statement at first that the animals were deer and later on reindeer is confusing in the attempt to differentiate between the objective portrayal by the natives of the two species of animals. It is evident that the reindeer is intended, because of the unusually long, narrow antlers and their forward direction in their position upon the head. It is unfortunate that no other pictographs from Point Barrow are at hand, in order that satisfactory comparison with other representations of deer and reindeer might be made so as to make note of the specific differences, as we find so elaborately portrayed in the records from Sledge Island, Norton Sound, and elsewhere.

The reference to a female animal is perhaps a random one, because the natives of Alaska, as well as the aborigines of North America generally, are too cautious and matter of fact to portray that which they do not intend. The horns upon the third animal—the doe(?)—are too strikingly like those upon the two preceding specimens to denote anything different from them in sex.

The statement that "the number of whales is open to suspicion" is worth noting, as frequently a large number of anything is denoted by an indefinite number of conventional indications of such objects. Various examples are given in which such large numbers have been engraved with an ornamental or decorative motive, leading one to suspect the true import intended by the recorder. A common example is found in the ordinary "war bonnet" of eagle plumes, worn by several of the so-called Prairie tribes of Indians. The single feather is gained by a warrior when he either kills an enemy or is one of the first four to reach and touch the fallen enemy with the coup stick, a bow, or any other object. The act of being able to reach the enemy in such manner is deemed by the Indian to denote that he is nearer and more in danger than the one who may have fired the fatal shot. After a number of plumes have been thus gained by a warrior, each to indicate an exploit of valor, the number becomes inconvenient for attachment to the scalp lock and the long plumed bonnet is permitted, provided the one so entitled thereto is able to purchase such a decoration, the present value of eagle plumes varying from $1 to $2 each.

In similar manner an indefinite number of items, to denote many, is often portrayed in pictorial records of various rudely remote peoples; and it is probable that the above is only another instance, of which others are noted in the present paper.

HUNTING AND FISHING.

The characters in plate 69, fig. 3, at Nos. 1, 2, and 3, denote whales, while at Nos. 4, 5, 6, and 7 are indicated four American whaling ships. The one at No. 7 is placed in a foreshortened position, something seldom expected to be so reproduced by primitive peoples.

No. 8 appears to be an ice pan, at the base of which two men seem to be in the water with hands uplifted to attract attention; while No. 9 is a seal fisher hastening forward. The harpoon is seen resting upon the rack upon the fore part of the canoe, as is also perceptible in No. 10. The large bodies behind the occupants of the boat are floats used to retard the swimming and escape of harpooned seals.

The manner of hunting sea otter is as follows: In Alaska the Aleuts or other natives are the otter hunters. A large number of bidarkas take provisions for a day or two, and when the weather is calm, put out, often out of sight of land. When arrived on the banks most frequented by these animals, the bidarkas form a long line, the leader in the middle. They paddle softly over the water so as to make no disturbance. If any Aleut sees an otter's nose, which is usually the only part above the surface, he throws his dart and at the same time elevates his paddle perpendicularly in the air. The ends of the line dart forward, so as to encircle the animal in a cordon of bidarkas, and everyone is on the watch for the second appearance of the otter. The same process is repeated until the animal, worn out with diving, lies exhausted on the surface, an easy prize for his captors. The skin belongs to the hunter who first struck it, or to him who struck nearest the head.[1]

Plate 69, fig. 2. Capture of polar bear [?]. The signification of the illustration is that a bear was observed eating a seal, when the natives of the village at No. 9 went forward in the canoes, Nos. 5 and 6, when one of the bravest made the attack with a spear. The seal is indicated at No. 1.

The figure at No. 4 is not explained; while at No. 8 a canoe is still resting upon the scaffold drying.

In plate 69, fig. 1, is a record of a whale and seal hunt. No. 1 is a seal which has been captured by the two hunters, Nos. 2 and 3, and is being dragged to shore for return home. The hunter is carrying his seal lance before him like a staff, while No. 3 is carrying his at a charge. Nos. 4, 5, and 6 are baidarkas with the oarsmen within, the foremost individual in No. 6 having harpooned a whale, which is heading away, spouting. The object between the boats, Nos. 5 and 6, is a seal diving out of harm's way. The hunter at No. 8 has caught a seal, No. 10, and on the line is a small disk which denotes the float used. In some pictographs the disk represents the opening in the ice, through which the line is dropped, although this may be in the air and resemble a float.

No. 11 is indefinite, while Nos. 12 and 13 denote the summer or temporary habitations, erected for a short sojourn only, until the meat has been secured which is being placed upon the rack, No. 14, by the person shown at the left end, in that employment.

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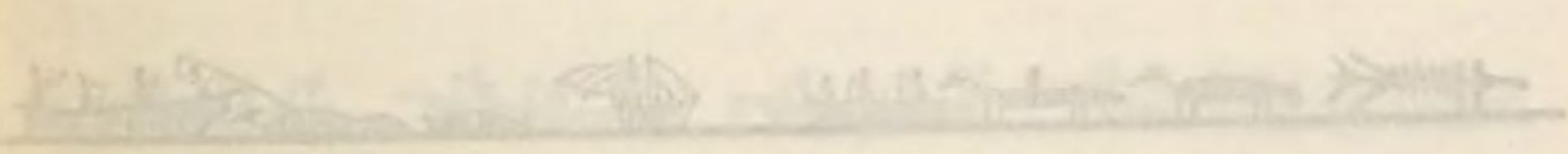
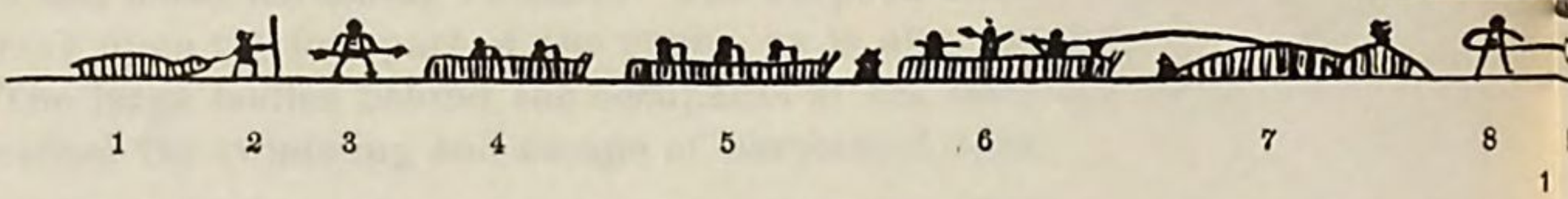
[1] Dall, Alaska and its Resources, pp. 490, 491.





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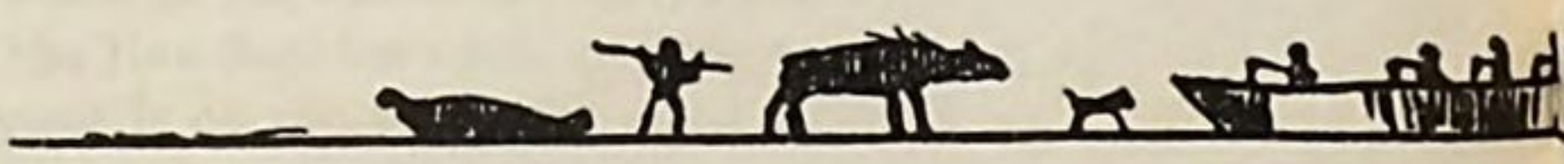

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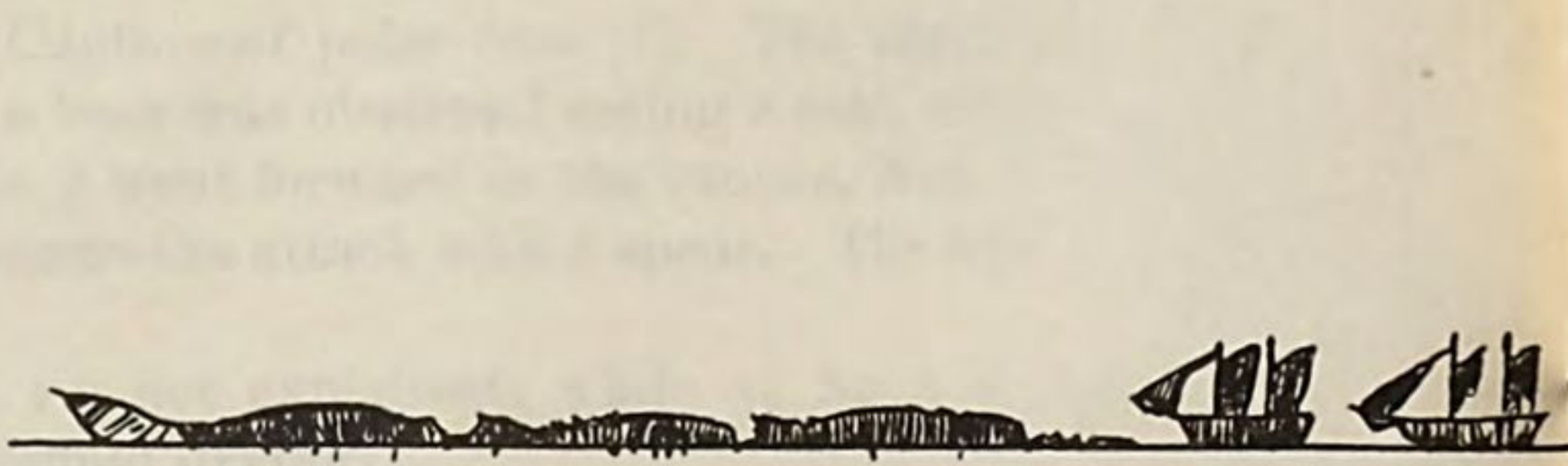

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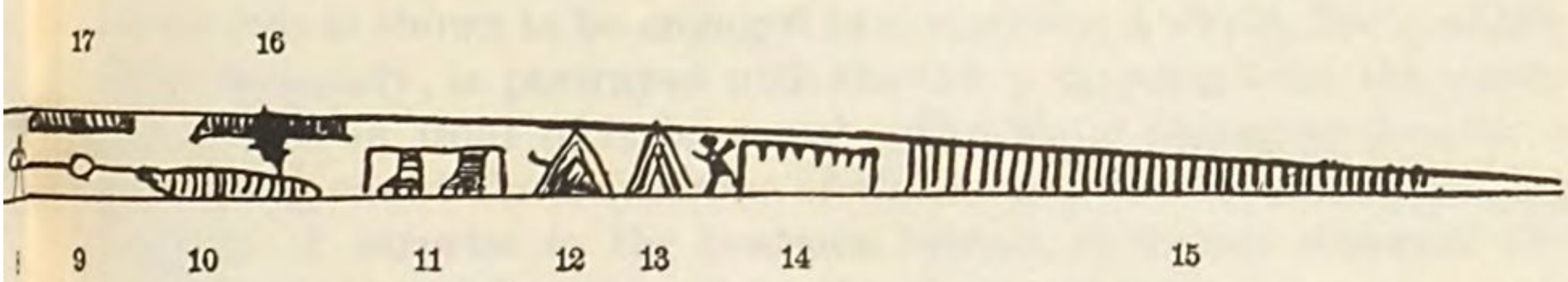
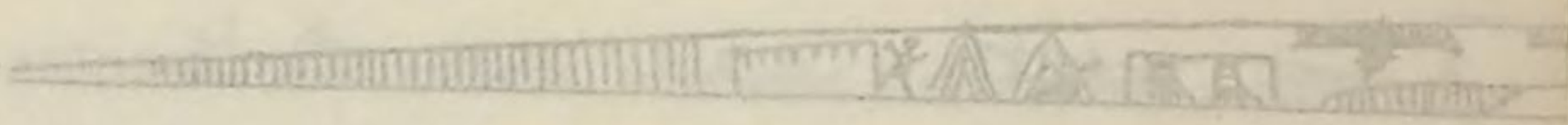


IVORY RODS.



The vertical strokes continuing beyond this to the end of the record are simply ornamental, the space being deemed too small for further records.

At Nos. 16 and 17 are two baidarkas to indicate that the seal was captured while on a hunt by boat.

The accompanying illustration, in plate 69, fig. 4, represents a fleet of canoes, the natives having gone on a hunt, although the leading umiak only is shown to be engaged in harpooning a whale, No. 7, which, quite unusually, is portrayed with the tail projecting from the water. The animal in front of it is a seal. The No. 9 character denotes a seal diving out of the way. One of the men in No. 12 boat is making a signal of surprise to the boatmen behind, as he has observed the whale in sight and has thus given the alarm as well.

No. 1 seems to have been intended for a specific character, but may have remained unfinished, merely touching up the right-hand end so as to be ornamental. The two figures in Nos. 2 and 3 indicate wolves, the number captured by the party in the baidarka, No. 4. No. 5 is a whaler observed by the hunters.

Fig. 104.

RIVAL WHALE HUNTERS.

An illustration of rivalry in hunting the whale is given in fig. 104, but the sequel does not appear. The two boats were pursuing the same animal, which is shown spouting, and the harpoon throwers are in the attitude of casting their weapons at the same instant.

The etching is strongly and artistically executed.

Plate 64, fig. 2, represents a very old ivory bow drill from the Diomede Islands. The specimen is actually brown with age and bears incisions upon four sides. The surface shown in the illustration bears at the left a large umiak in which are four hunters, the one in the bow being represented as throwing a harpoon toward an approaching whale. Beyond this figure is a hunter in his kaiak who has thrown his harpoon at a whale, the latter being represented with the head projecting vertically from the water. The short irregular character in the stern of the kaiak represents the inflated seal-skin float. Two other whales in this upright position are shown to the right of the above mentioned, and they are approached from the right by two hunters in a large umiak, the one in the bow being also represented as having cast a harpoon, the line extending from his hands to the animal. At the extreme right is a hunter in his kaiak. Upon the opposite side of the specimen, beginning at the left, is a walrus being dragged forward by four men. To the right of this group are shown four kaiaks each with its hunters, and each hunter having his harpoon elevated horizontally above his head as in the act of throwing. Behind the hunters

are represented the usual figures of the inflated seal skins used in connection with the harpoon line. Three large figures of walruses are next shown, upon the back of the first being portrayed a young one. At the right of the upright walrus is an umiak containing four hunters who are traveling toward the right in pursuit of a whale, towards which the hunter in the bow of the umiak is casting his harpoon. Upon the upper narrow edge of the rod are a number of small figures, at the extreme left six natives being shown, each with one arm elevated, and a small line extending from the hand to the head, very much suggesting the use of the pipe as in the act of smoking. Three seals are next drawn, beyond which are two kaiaks, and beyond these the figures of six seals. The entire series of characters are arranged with such apparent regularity as to suggest more of an attempt at ornamental decoration than the portrayal of any experience in hunting. The narrow face opposite to this bears two horizontal parallel lines within which are a number of narrow cross lines and two circular indentations, neither of which appear to have any special significance further than an attempt at simple ornamentation.

Another illustration of whale and seal hunting is given in plate 70, fig. 1. The four creatures indicated by No. 1 are seals, toward which the native in the canoe is paddling, No. 2. Above him is a small cross denoting a bird in flight. The spouting whale, shown in No. 3, is harpooned by the man in the bow of the baidarka, No. 4, while the man behind him is holding aloft his catch—a large fish—while with his right hand he is also calling attention by the gesture of surprise. The others in the boat are paddling to keep up with the whale.

Nos. 5 and 6 appear to be seals, although the latter resembles more nearly the smaller whales, as drawn in other pictographs, yet this can scarcely be, as the hunter, No. 7, is lying upon the ground and resting his gun upon a ridge or rock, in the attempt to shoot the animals.

The hunter at No. 8 is stealthily coming up to No. 7, carrying a gun or lance.

No. 9 denotes three seals, while No. 10 is a hunter awaiting their approach, he lying behind a small heap of what, by its remaining untouched by the graver, would appear to be ice.

No. 11 is a boat being carried out of the water, a whale, No. 12, having been killed and ready to be cut up. No. 13 is a baidarka containing some returning whales, while No. 14 is a seal, the hunter taking it to his habitation at No. 15, the interior view being disclosed, showing within two of the hunter's family, one seated upon the floor while the other is addressing some words to him, or her, as denoted by the attitude of the hands. Another permanent dwelling is indicated at No. 16, the smoke rising out of the smoke hole, while the owner is at the side entering into conversation with the others because of the return of the lucky hunter.

The accompanying fig. 105 is interesting because two different pur-

suits are represented, one being interrupted in order to prosecute another. The natives had gone out in their baidarkas to fish, as indicated by the middle figure of No. 2 group holding up two fish which had been caught, and the man No. 4 also having a large salmon (?) attached to a pole. A whale was observed spouting, No. 1, when the boatmen started after him, the foremost one darting his harpoon into the animal while the one on the stern began to make signals, calling to his companions that there was game in sight. The signal is the common one of holding aloft, horizontally, an oar so that it may be seen by those toward whom it is held and intended to be seen. The signal was observed, as we perceive in No. 3 the three men pushing into the water the baidarka, lying on its side, the middle man holding the harpoon while the one at the right is pushing at the vessel. No. 4, as already stated, has a fish attached to a pole; No. 5 is making gestures, also calling to others to come, while No. 6 is seen walking toward the shore with a rod, probably intended for an oar.

The three small crosses in a horizontal line above No. 3 denote birds flying in air.

Plate 66, fig. 1, consists of a short ivory handle for carrying a kantag or bucket. It is a very old, yellowish-brown piece of ivory, and was

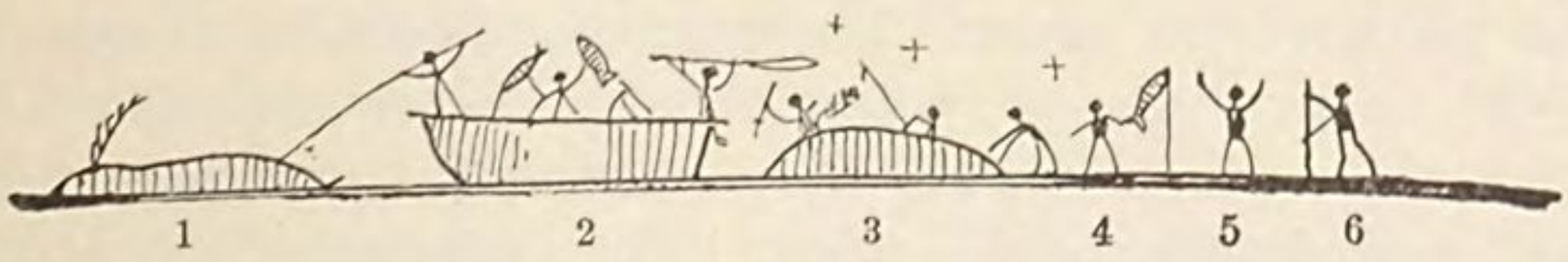


Fig. 105.

WHALE HUNT.

obtained at St. Michaels. The engraving is characteristic of the locality, being deep and boldly cut. Upon the upper surface shown in fig. 1 appears an umiak with four hunters, the one in the bow preparing to throw his harpoon toward a whale. In front of the latter is another umiak, the man in the bow of which is also throwing his harpoon to a whale, while in front of the latter is a projecting fluke, indicating an animal of similar species descending into the water, while to the right is an umiak, the occupant of which is endeavoring to throw his harpoon into the whale just referred to. At the extreme right is another umiak with four men, the one in the bow also harpooning a whale. The head of the latter is drawn very much in imitation of a tuskless walrus, and might be mistaken for that animal, or a seal, but for the spray of water which is represented as being thrown from the blow holes. Turning the handle around, we perceive advancing from the right two umiaks with masts erect, upon which are several indefinite figures. A little farther on, however, is shown a whale to which a line is attached, indicating that he has been harpooned, while the shapeless figure referred to may possibly indicate the inflated skin which is always attached to impede progress in the case of an escaping monster of this kind. The curious

figure a short distance above the whale and directly opposite to the fluke spoken of in the record above, represents an island with its elevated center and precipitous sides. Upon the other side of the top carving the drawings are a little more delicate. Two of the most conspicuous characters on the left side represent seal nets. The two umiaks are proceeding in the direction of a whale which appears to have been harpooned, as at the end of a long thin line there appears attached the usual float. The figure at the extreme end is that of a seal, while the one to the left of it may be another animal of the same species. Between the latter and the whale is a very small and very delicately drawn kaiak. The man represented has a paddle, while a spear projects backward and upward behind him.

On the under surface of the bow, between two parallel lines but a quarter of an inch apart, are about twelve characters denoting various animals which the hunter wishes to intimate he has killed. Some of them can be identified, while others can not, the drawing being rather crude.

The specimen shown in plate 59, fig. 2, is from Cape Prince of Wales, and represents a variety of hunting records. Beginning at the left hand along the lower edge is visible a very crudely carved figure of a native with a spear, following two bears. To the right is a native kneeling, preparing to shoot. The next four figures represent umiaks loaded with native hunters going to sea. These are followed by the figure of a whale which is being harpooned by the hunter in the bow of an umiak immediately to the right. The next figure is that of a dog, and the next a native who has hold of a thong by which he is leading another dog. Then we observe a hunter dragging a seal, while a short distance above this are small crosses representing birds. The next is a walrus, to the right of which is a dog dragging a sledge upon which is seated the owner. Turning the bow around, we perceive at the left four >-shaped figures, indicating the end of both records. The first figure projecting from the base line is a whale's fluke, then several small figures to represent walruses, then two men are observed grasping hands, with apparently a spear between them. A large umiak is shown in front of another walrus, two of the hunters in which have raised their spears to cast toward some walruses lying upon a floating cake of ice. To the right of these animals is represented a seal being dragged by three hunters. These are preceded by another group of three, who are also dragging home a seal. A single native is next shown, with a line directed to a spot near the base line, which denotes a seal's head. The large fin-like character represents a fluke, as in the first figure of this record. An umiak is then shown, one of the natives in which is in the act of harpooning a whale, while a native in one of the other umiaks has also a line attached to him. The record is concluded by another umiak containing four men pursuing a walrus. Upon the under side are a number of illustrations of hunters, some

harpooning walruses, while others appear to be after some reindeer who have taken to the water. Along the narrow edges are also representations of various objects, one side being filled more than half of its length by a procession of dog sledges, the remainder being filled with sealers upon ice floes, a whale, and some boatmen. The other edge represents some very deeply incised and graphic outlines of boats and marine hunters, the record terminating at one end with some flying birds, while at the other two individuals dragging a seal are shown.

Plate 22, fig. 5, is a drill bow from Kotzebue Sound. The specimen measures 16½ inches in length. A sectional view of the specimen is lozenge shaped, so that there are both above and below two faces upon which records are engraved, making a total of four records. As represented in the illustration, the record upon the lower side consists of seal and whale hunting scenes. At the extreme left is a rude outline of an umiak, within which are crude representations of human beings. The vessel is very close upon an immense whale, which is evidently escaping from them in the direction of another umiak which appears to be approaching it. The oblong figure to the right of the last named umiak is an inverted boat placed upon scaffolding for the purpose of drying. Some partly eroded figures are seen between the bow of the boat and three men, one above the other, who are portrayed in the act of dragging home an immense seal. Beyond this are three umiaks filled with hunters, while still farther to the right are two or three walruses swimming in the water. To the right of the last named is a figure very much resembling the conventional outline of a wolf, while beyond that, to the right, is a low elongated structure, heavily etched, which represents a winter habitation. Above the entrance is a human figure, with arms extended, as if attracting attention to something. Beyond this structure, to the right, is a very delicately engraved scaffold, upon which food or other similar materials are placed for safety.

Along the upper surface of this bow, beginning where the previous story ended, we find a storehouse erected on stilts attached to the ordinary winter habitation, upon and about which are the outlines of some human beings. A food rack is erected above the entrance to this habitation, from the horizontal bar of which are suspended objects which are probably pieces of meat or fish, as the occupants appear to be seal hunters, two of them being represented in the act of dragging home seals. Just to the right of this is a grazing deer whose legs are unnaturally long, and in front of this is an umiak holding four hunters. The two small figures to the right of the last named are seal heads protruding from the water. Beyond this is another umiak with four hunters whose arms are in various attitudes as if in earnest conversation. The small mound-like figure at the bow of this boat represents the shore, and immediately to the right are shown three natives dragging home upon its back a huge seal. Beyond this animal are other hunters similarly engaged. The oblong outline somewhat resembling

a canoe lying on its side can not be determined. To the right of this, however, is another figure of a seal being dragged toward the right, and approaching two men whose arms are uplifted as if in joy at receiving assistance. The partly obliterated figure of a human being is seen approaching the entrance to one of the ordinary winter habitations, from the door of which, as well as from the middle portion,

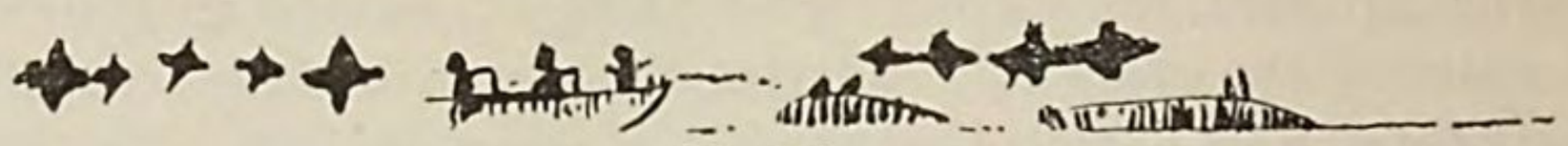


Fig. 106.

WHALE HUNTERS.

appear two vertical sticks with small figures at the top, both representing votive offerings. The scaffold at the right represents a storehouse used for food or grain.

In fig. 106 is presented another illustration of the indication, pictorially, of what the hunter desired, or saw, and how much thereof he secured. The three men in the baidarka are headed toward two whales, the foremost one of the former, he in the bow, being represented in the act of casting a harpoon, the dotted line indicating the course. The whale struck by the weapon is headed toward the hunters, indicating that he was captured; whereas the second whale is going in the contrary direction, denoting that he had been observed and very much wanted, perhaps, but not captured. The short projections above the heads of the whales denote fins—and seem thus to specify the finback. The cruciform figures denote flying birds.

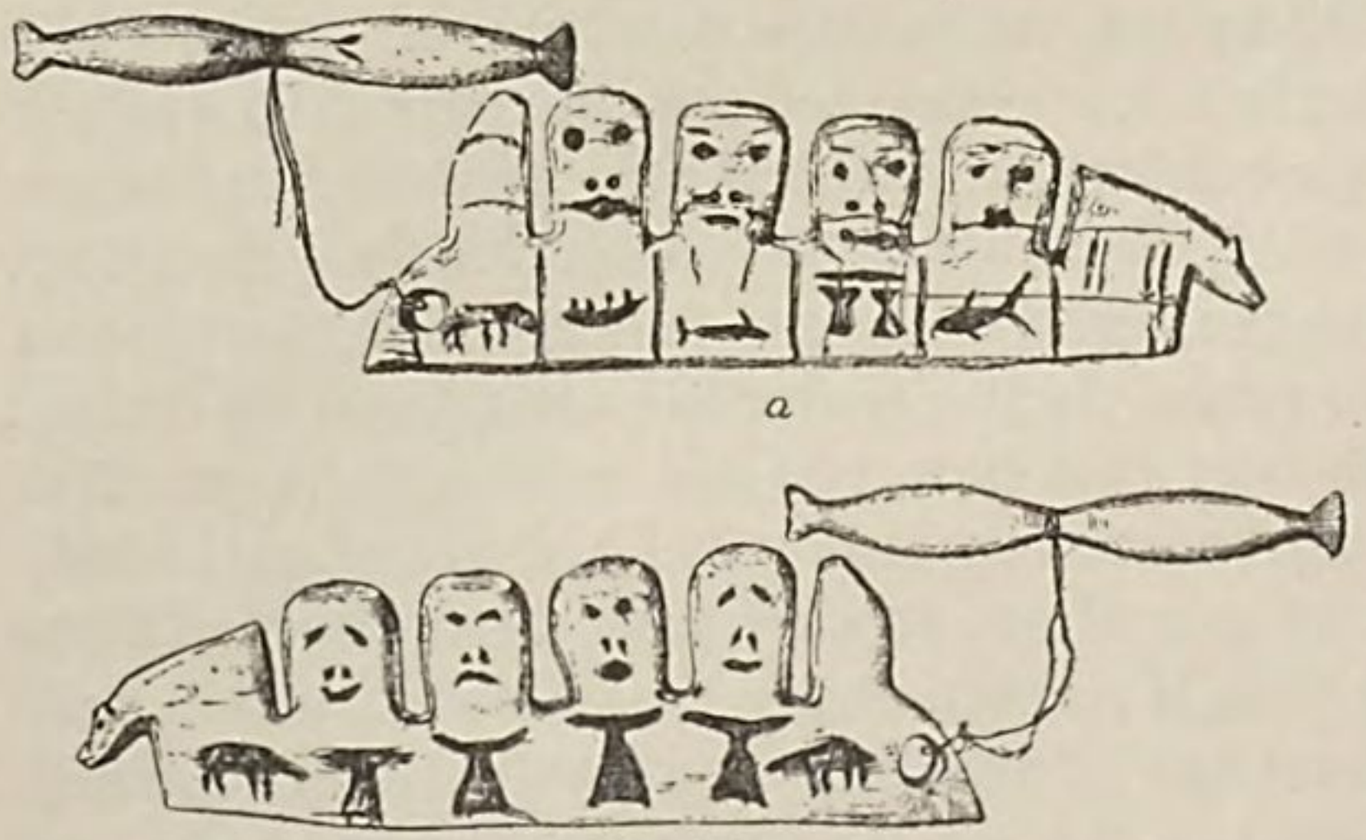


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Fig. 107.

IVORY CARVING BEARING PICTOGRAPHS, POINT BARROW.

A peculiarly interesting specimen of art is illustrated in fig. 107, and consists of a flat piece of ivory, 4 inches long and 1.2 inches wide, roughly carved and covered with incised figures. The specimen is made of a fragment of an old snow-shovel edge, is perforated at one end, and has attached to it by a strand of sinew a little handle formed of ivory, and represents two bowhead whales with the heads attached, so that a slight stricture results, about which the cord is tied.

The spiracles on the effigies are incised and blackened.

"The upper edge is carved into five distinct heads—first, a rude bear's head, with the eyes and nostrils incised and blackened as usual; then four human heads, with a face on each side. The front faces have the noses and brows in low relief, and the eyes, nostrils, and mouths

incised and blackened; the back ones are flat, with the last three features indicated as before. At the end is a rude figure of a bear, heading toward the right, with the ears in relief, the eyes and mouth roughly incised and blackened, and the legs indicated by roughly incised and blackened lines on the obverse face. Both faces are covered with rudely incised and blackened lines.

"On the obverse there is a single vertical line between each pair of heads. Below the bear's head is a bear heading toward the right; under the first human head, an umiak with four men; under the second, a 'killer' (Orca) heading toward the right; under the third, two of the usual conventionalized whales' tails suspended from a cross line; and under the last, a 'killer' with very large 'flukes' heading toward the left.

"On the reverse there are, below the bear, a bear heading toward the right, below each of the human heads a whale's tail with the flukes up, and under the bear's head a bear heading toward the right."[1] This end is perforated as before stated.

Fig. 108 represents a village near a stream, or the seashore. Nos. 1 and 3 are habitations, while the structure at No. 2 represents a store-

Fig. 108.

FISHING NEAR THE VILLAGE.

house, a box-like receptacle built upon poles within which to store food. Upon the entrance way of No. 3 is seen a man occupied in some ordinary occupation, but at his left is a vertical pole upon which is a short transverse line, the effigy of a bird or fish, most probably the former. This is a votive offering, or "shaman stick," erected to the memory of a departed member of the family. Bird carvings are deemed the best that can be selected, flying spirits or demons, typified by birds, being considered good omens, whereas walking or crawling ones are often malevolent.

To the right of the man, over the entrance to the habitation, is another "shaman stick," erected probably with the same motive as the preceding one, though to indicate a second person, only one stick being erected to one individual at the same place.

The four figures seated upon the ground at the water's edge—Nos. 4–7—denote four persons fishing, the floats being visible on the lines of Nos. 6 and 7.

Fig. 109 represents a party of fishermen, the three figures at the right being in a seated posture. Considerable surface erosion by constant use has weakened the lines at the left side to such an extent as

[1] Ninth Annual Report of the Bureau of Ethnology, 1887–88, 1892, pp. 397, 398, fig. 398.

to make interpretation more difficult. The long upright lines may have been intended to denote rods, as a similar line in the hands of No. 6 is known to be.

No. 3 may have had a rod and line attached to his hands, as in Nos. 6 and 7, but the surface here is perfectly smooth and polished, thus obliterating all evidence of such implements.

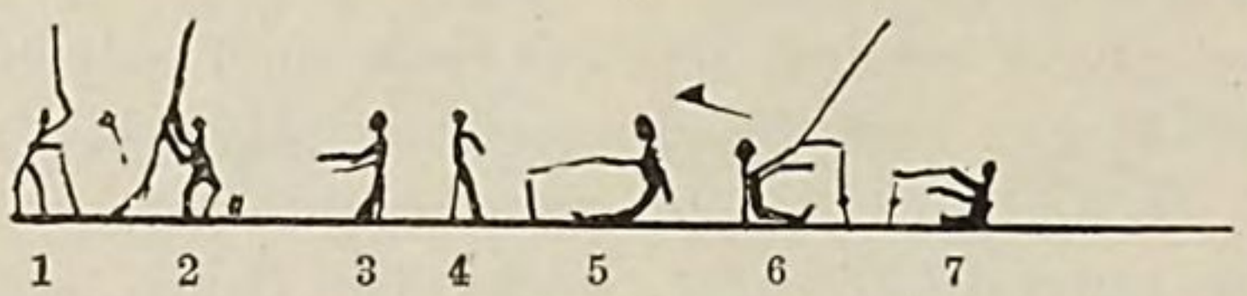


Fig. 109.

FISHING WITH HOOK AND LINE.

As many of the ivory drill bows and bag handles have inscribed upon them records of seal hunts in which are found engravings of natives dragging seal, it seems proper, if not necessary, to illustrate the utensil with which the dragging is performed. Fig. 110 represents a seal drag, an article with which every seal hunter is provided and carries with him for dragging home his game. This consists of a small ivory handle or knob, to which is secured a stout thong doubled at the other end in a bight about 18 inches long. The bight is looped into an incision in the animal's lower jaw, while the knob serves for attaching a longer line or the end of a dog's harness. The seal is dragged on his back, and runs as smoothly as a sled. The illustration of the drag referred to above is one of a small collection in the National Museum, and marked as from Point Barrow.[1]

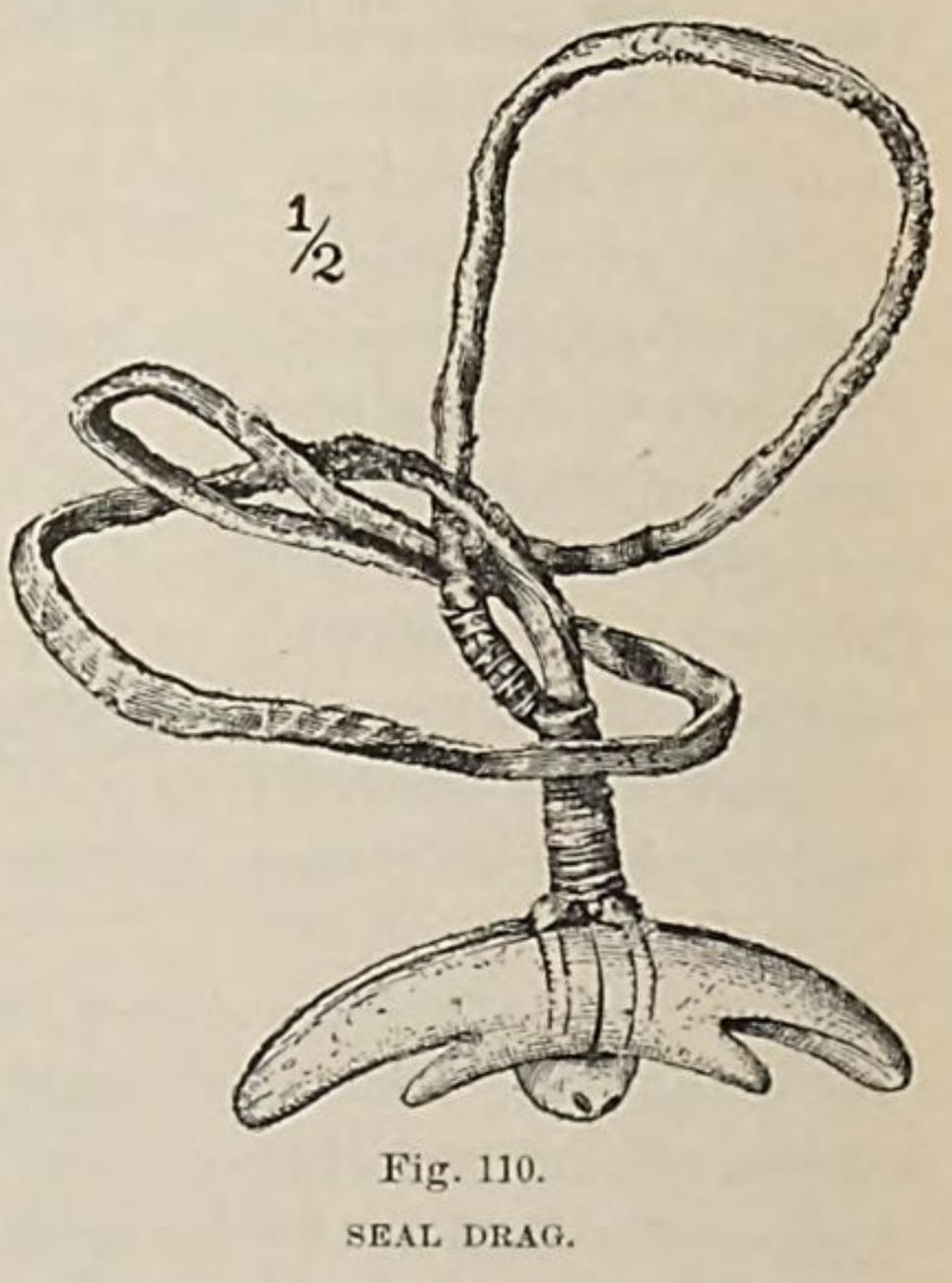


Fig. 110.

SEAL DRAG.

Some of these ivory knobs show slight markings or incisions to serve as ornamentation, as shown in plate 26, fig. 3, though the greater number are carved in symmetrical forms, and usually in imitation of seals, whales, or something of this kind.

Floats of inflated seal skin are used in capturing whale and walrus. An excellent specimen from Point Barrow,[2] fig. 111, will serve to illustrate the general appearance of the float, and will furthermore serve to make intelligible the peculiar fish-like object portrayed on some ivory records, where the seal fisher is represented as in his kaiak, with the harpoon and float projecting backward from the body. The accompanying illustration is here reproduced from the Point Barrow report by Mr. Murdoch.

The village in plate 70, fig. 2, is located at Nos. 1 and 2, the store-

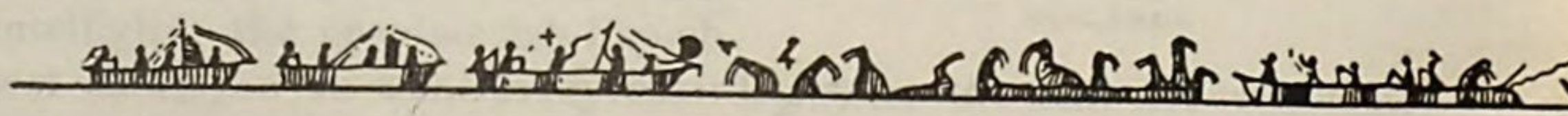
[1] Ninth Annual Report of the Bureau of Ethnology, 1887–88, 1892, p. 256, fig. 257 [a].

[2] Idem, p. 246.

1 2 3 4 5 6 7 8 9

1 2 3 4 5 6

1 2



10 11 12 13 14 15 16

7 8 9 10 11 12 13 14

3 4 5

house being at the extreme left end of the first house. Smoke is rising from the middle elevation, while upon the entrance are two persons, one of whom is shown with his arms elevated, as if hailing some one, while the second appears to be in conversation with the man on the scaffold belonging to the next house, at No. 2. On the latter are two people pulling up a ladder to get the hunter to bring up the meat, when the seal, dragged by No. 3, is eaten up. The hunter's dog is following. No. 4 denotes two men pulling at a seal, while those at No. 5 are similarly engaged. Nos. 6, 7, 8, and 9 are also taking home their captures. The figure in the air, between Nos. 7 and 8, resembles the usual outline of an evil spirit, as portrayed in connection with ceremonial performances of shamans, but in the present connection the import of the character is unintelligible, unless the artist intended to represent one of the natives in the act of jumping.

No. 10 denotes two seals, No. 11 a water bird, while No. 12 indicates a canoe with the rowers standing about in conversation, in which the inhabitants of No. 13 are participating.

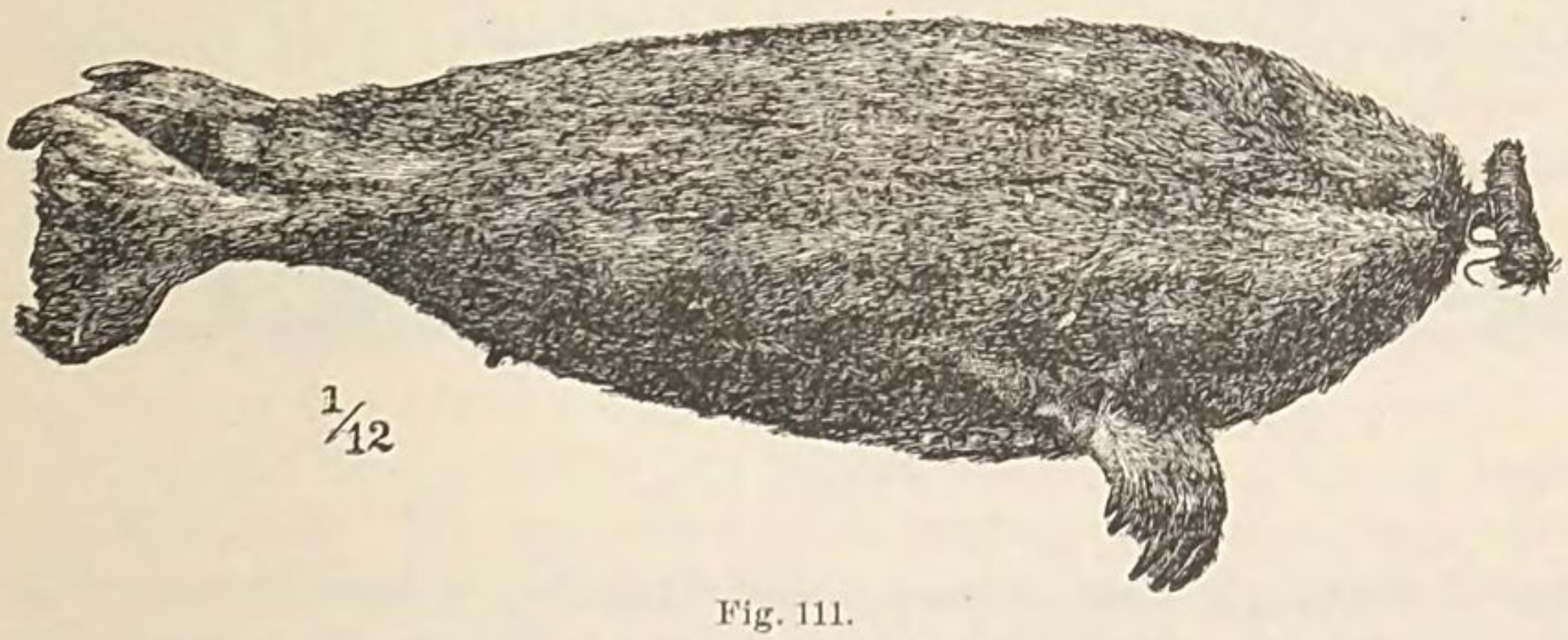


Fig. 111.

INFLATED SEAL-SKIN FLOAT.

No. 14 is the storehouse or scaffold belonging to the occupants of No. 13.

Plate 22, fig. 5, represents another drill bow or bag handle from Kotzebue Sound. The square object on poles, at the right end upper line, represents a cache or granary, while the dome-shaped structure is a winter habitation, on the entrance to which is a native with his arm directed downward, as if indicating that place for some particular reason. The next character represents a scaffold used for drying meat or fish. Two men are represented as approaching the rack, both dragging an oddly formed character, probably intended to represent a seal. The mammal is a reindeer, while to the right is an umiak containing four men approaching two figures, the forms of which are not sufficiently distinct to identify.

Beyond these, however, are two seals whose heads are seen protruding from the surface of the water. Another umiak is shown, beyond which three men are shown dragging a seal or walrus. These are followed by three others similarly occupied. The dome-shaped figure

to the right denotes, without doubt, a similar animal upon an ice floe, the latter being indicated by its having been left white to denote transparency.

One man is seen dragging at a seal to the right of the floe, and a little farther on are two men making gestures, the first having both hands and arms directed upward, while the second has one arm directed to the left of the rod, while with the other the hand is flexed toward his head, as if beckoning to some one at his left and indicating the direction to his right.

The walrus have been surprised by hunters, as shown in plate 70, fig. 3, many of them swimming away, as shown in No. 3, one animal having its young still resting upon its back. The ice pan at No. 2 has three animals remaining upon it, a young walrus at its mother's back being indicated in the middle figure, while the largest figure is already harpooned, its flippers (?) being extended in its endeavor to slip into the sea and escape. The middle boatman in No. 4 is holding aloft his paddle, thus calling for assistance, the signal being visible, perhaps, by other hunters, who will at once respond. In No. 5 the hunter had harpooned his walrus, which immediately attempted to escape by resorting

Fig. 112.

A WALRUS HUNT.

to an ice pan, upsetting the canoe and dragging it upon the ice, and at the same time throwing into the water the unfortunate hunter, whose head and shoulders are seen projecting above the base line, here indicating, also, the water line.

In fig. 112 is shown a remarkably graphic illustration. The artist was of more than ordinary cleverness, and the engraving scarcely requires any description. The animals noted in No. 1, the middle one on the ice pan in No. 5, and the one to the right—the last but one—are each shown with their young upon the back.

The ice pan upon which the animals had been floating is indicated by an outline only, the body being left white and in imitation of nature.

Plate 21, fig. 2, represents the back of bow shown elsewhere. As before, there is an upper and lower face upon which hunting records are portrayed. Beginning with the upper surface at the right-hand side, we perceive four walruses, to the right of which is an umiak occupied by four hunters. The one in the bow appears to have a short-handled ax, while the second has one arm uplifted, and directed forward from the mouth appears a short line terminating in zigzag, which is believed not to be accidental but intentional, and indicates voice or speech, sound being portrayed in other pictographs as well, seemingly

indicating this extent of acquaintance with the recording of subjective ideas. The third person in the boat is using the paddle, while the one at the stern has a weapon of some kind with which he is attempting to keep off an aggressive walrus which is following them.

To the right of this is another umiak paddling toward the right in the direction of the three walruses represented. Above the middle of this is a small cross which denotes a bird. The next figure represents an umiak in which are four people close to the body of a whale which has been harpooned. The elongated curved figure resting upon two short vertical lines represents a boat on shore and on a scaffold drying. At a distance of about $1\frac{1}{2}$ inches from this is shown a whale in the act of diving, as is intimated by the fact of the greater portion of the body being directed upward while the head is down in the water, as shown by the spray which emanates from the blow hole in contact with the surface. The oblong cross above this represents a bird. The adjoining characters to the right can not be definitely determined. The figures at the end, however, represent two winter habitations with the accompanying granaries and the presence of human figures.

Turning the bow around and following the remaining faces from the left hand, we find first a winter habitation with smoke rising from the center, in front of which is a tent with a vertical pole projecting upward at the right. A native is seen dragging home a seal, while to the right are more human figures apparently embarking in umiaks, three of these vessels being under way. Beyond the bow of the right-hand boat and upon the base line are two figures which represent seals, while of the two in the air the one at the left represents a fox or wolf and that at the right a bird. The remaining half of the space upon this bow is filled with a procession of natives dragging home seals, eight of these animals being shown. The vertical sticks used by these natives are seal spears, which they employ to aid locomotion.

Plate 24, fig. 3, represents a drill bow from Nubuiakhchugaluk, collected by Mr. E. W. Nelson.

The specimen measures $12\frac{3}{16}$ inches in length, and is rudely decorated both above and beneath. The figure at the extreme left is partly obliterated. The next represents a native in his kaiak in the act of throwing a harpoon toward a walrus, which he is closely pursuing, and beyond which are four other animals of the same species. The next figure represents an umiak with three occupants, the one nearest the bow being represented as in the act of throwing a harpoon. Two large crude figures of walruses are between this boat and another umiak, in which are three persons, the one at the stern being shown with the rudder, the one in the middle having both arms extended and upward as if in surprise, and the one at the bow being in the act of throwing a harpoon toward a whale. Above this are five birds, indicated by crude crosses. To the right of the whale is a native with bow and arrow, preparing to shoot toward a reindeer. The triangular figure to the

right of the reindeer appears to be a summer habitation, while the figure of a mammal at the extreme right is not drawn with sufficient accuracy to admit of identification. The under side of the bow contains characters the import of which is very much the same as that of those just enumerated. The edges of the bow are decorated with horizontal incised lines.

The record given in plate 60, fig. 2, embraces several different exploits. In No. 1 the helmsman at the end of the large canoe is holding aloft the double-bladed paddle to attract attention and to call for assistance, as a walrus, No. 2, is making an attack upon the native in the kaiak, No. 3. The leaning figure in the stem end of the kaiak is the inflated seal skin used as a float in hunting whale and walrus. No. 4 is rock and indicates shore, near which is No. 5, a large animal. The canoe party at No. 6 are also making signals, seals having been discovered; No. 9, toward which the native in the kaiak, No. 8, is going, having already thrown his harpoon as indicated by the weapon before the bow, and securing one seal as noted by the harpoon protruding from its back.

Both boats are near a large rock showing a water-worn cavity, as in No. 7.

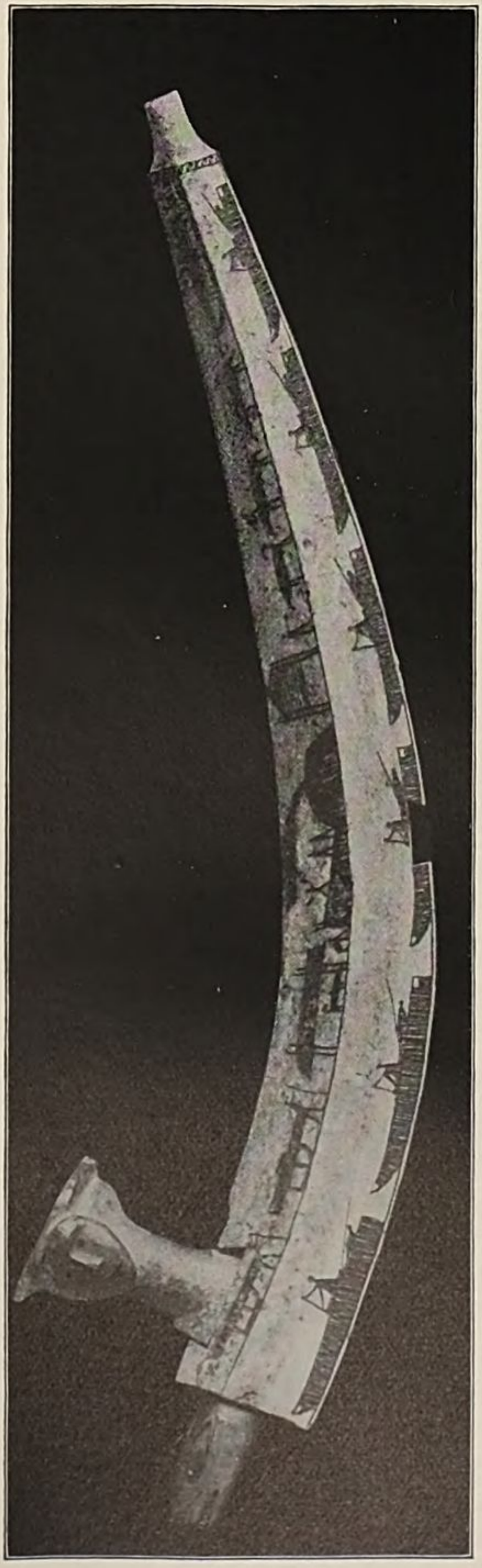
Another native, armed with harpoon and float, is paddling along at No. 10. The figures at No. 11 and 12 are either partly worn away or incomplete and are unintelligible.

The regularity with which the hunters and their captured seals are depicted in plate 60, fig. 3, is a step in the direction of the decorative—representation of a hunting exploit.

Each of the hunters has secured an animal, the hunter dragging No. 2 seal having a bow and arrow while the others have harpoons, the weapon being cleverly indicated by the barbed head in the hands of the native dragging seal No. 10.

Fourteen seals were secured, only one getting away from the slaughter, as indicated in No. 15.

The illustration in plate 60, fig. 4, is interesting because of an attempt at perspective. The record was too comprehensive to be engraved upon the ivory surface available, and as there were more canoes employed in the hunt than could be drawn along one line, in consecutive order, three of them are raised to appear as if they were in the air, though in reality beyond the two touching the water line in the foreground. The canoes at No. 2 are for one person only, while that at No. 3 has nine people in it. The walrus, which the party is evidently going to attack, are at No. 1. Nos. 4 to 11 embraces the habitations referring to the fact that a village is located there, while the scaffolds—with the exception of No. 6—are for canoes, the vessels being inverted and the paddles projecting beneath. The exception referred to is a food scaffold, to which a flight of steps has been placed. Two persons are observed on the roof of the house at No. 5, watching the departure of their friends, while a short



DECORATED IVORY PIPESTEM AND BOWL.

column of smoke is seen arising from the middle elevation of the habitation.

At No. 4, food is seen suspended beneath the inverted boat, while above it the harpoon is projecting, showing that the weapon is kept near at hand for immediate use, should occasion demand it.

The engraving in plate 70, fig. 4, presents interesting details in the portrayal of various attitudes assumed by walrus Nos. 4, 7, 9 and 11, as well as the specific difference between the canoes, the baidarka holding more than one person, and the kaiak, generally, but for one person. The former is shown in various styles, as Nos. 1, 2, and 3, while the latter is represented in Nos. 6, 8, 10, 12, 13, and 14. The small cross above No. 3 denotes a bird in flight, as also the two figures of like form above the seal at No. 7. A large water fowl still remains upon the water before the bow of the kaiak at No. 8.

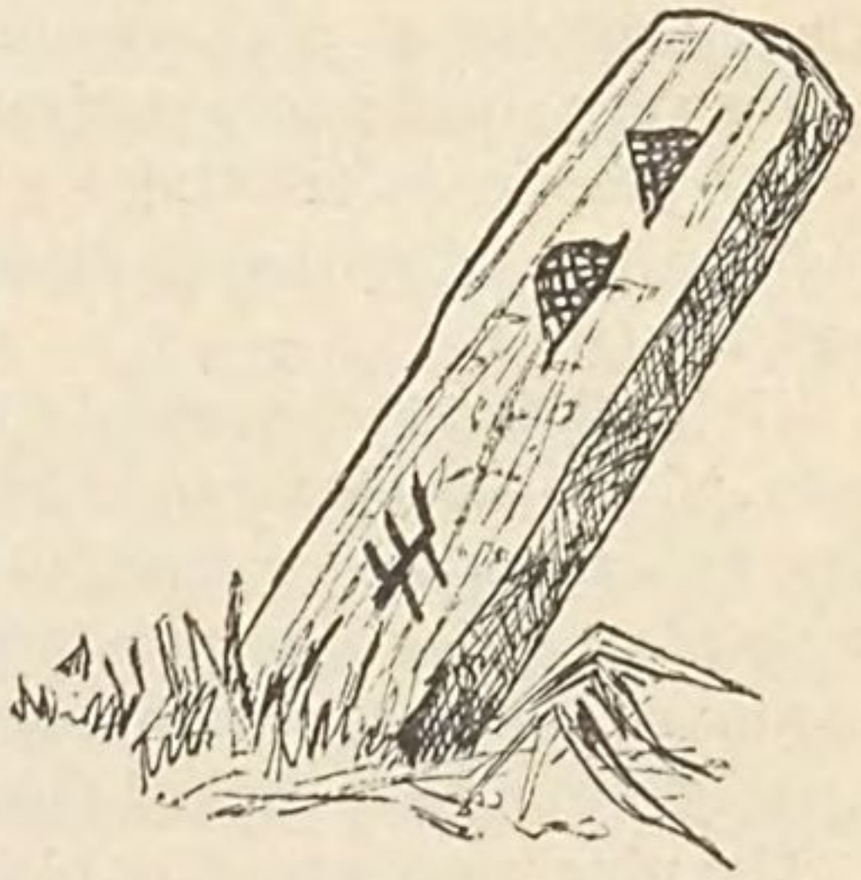


Fig. 113.
ALASKAN NOTICE OF DIRECTION.

The hunter in the kaiak No. 6 has thrown his harpoon into a walrus, while the occupants of Nos. 10 and 12 have raised their weapons preparatory to throwing them. The elongated objects projecting from the kaiaks, behind the occupants, Nos. 10, 12, and 13, are inflated seal skins used as floaters for the harpoon line, to impede the speed of the harpooned animal, and also to prevent its escape by remaining too long underwater or to trace its course while there.

Fig. 114.
ALASKAN NOTICE OF DIRECTION.

TRAVEL AND GEOGRAPHIC FEATURES.

Locomotion by boat is graphically represented in many records and by sledge in occasional instances. Walking with the seal spear used as a cane is common, and in one example age is also indicated by the attitude of the bent body, a method of portraying physical condition seldom found in Eskimo pictographs, but of frequent occurrence in the records of the Ojibwa and Dakota.

Fig. 113 is reproduced from a small slab of wood, and is explained as follows:

Seal hunters thus inform their comrades that they have returned home: The first to return to the regular landing place sometimes sticks a piece of wood into the ground leaning toward the village, upon which is drawn or scratched the outline of a baidarka or canoe heading toward one or more outlines or lodges, signifying that the occupants have gone toward their houses.

In this connection may be mentioned a common device used by the natives of southern Alaska and Kadiak to indicate direction taken or to be taken. When hunters become separated the one first returning to the forks of the trail puts a piece of wood in the ground, on the top of which he makes an incision, into which a short piece of wood is secured horizontally so as to point in the direction taken.

This device is sometimes drawn upon ivory and other materials, in connection with other objects to make pictographic records, and then simply represents a character like the letter T, the upper crosspiece being very short in comparison with the vertical stroke.

The practice of erecting such sticks to indicate direction is very common to the tribes living along the Great Lakes, especially the Crees and the Ojibwa.

Plate 25, fig. 2, represents a snuffbox of walrus ivory. This specimen, which was obtained at Norton Sound, is crude and very old. Upon the upper border or margin is a line encircling the specimen, upon which is a series of very interesting although crude figures. The only engraved character below the line, upon one side, is a very rude sledge attached to a long-necked dog.

The pipe represented in plate 71 measures 10½ inches in length along the lower outer curve, while the ornamental head in front is 1 inch in length. The latter is easily removed, being merely an ornamental head of the peg used to plug the drilled tube of the pipestem. The stem is three-fourths of an inch in lateral diameter and about 1½ inches through the stem at the back of the bowl—from top to bottom. The bowl and its supporting stem is 1½ inches in height. Upon either side of the rim of the bowl is a carved human face with blackened eyes and mouth, the nose being quite pronounced.

The engravings occupy the four sides of the stem, the two lower panels being reserved for boating scenes, while the upper are retained for game and village scenes. Upon the upper right-hand side are six reindeer, followed by a wolf, while before the foremost reindeer is the figure of a man in the attitude of following sea fowl, evidently in the attempt to secure some.

Beneath this scene is a fleet of eight umiaks, under rail, while in each vessel are the outlines of human figures, one at the bow of the leading umiak reaching toward, or grasping, the foresail stay, while every helmsman has his oar to steer his boat. In the fifth boat—forward from the mouthpiece of the pipe—is one native smoking his pipe.

On the left-hand side, in the lower space, are six kaiaks, each having its occupant using the paddle, while toward the stem is seen projecting the harpoon and seal-skin float, ready and inflated for use.

The upper space portrays a village scene, in the middle being the dome-shaped winter habitation, from which smoke is issuing; three persons upon the roof of the entrance are watching the return of the hunters, one raising his arms as if hailing the latter with pleasure at

their safe or successful return. The hunters are at the left dragging along their kaiaks upon sledges. The figure placed upon stilts is an umiak, suspended for drying and protection, while beneath it is a dog and his master approaching the entrance of the habitation.

At the right is a storehouse or granary, built above the ground, and near it a man calling or urging forward the dog hitched to the sledge, upon which is placed a load and one person.

The artistic execution of the engravings is good. The lines are very uniform in depth and width, showing the artist to have been an expert in the use of the graver as pertains to the mechanical part of the etching, at least.

The lines are all filled in or stained with a very black substance, giving the work rather a harsh and new appearance and not so soft and warm in tone as some of the older and more worn specimens.

The engraving in plate 40, fig. 1, is very bold and seems to present strong evidence of perspective drawing, not through mere accident but from intention. The gradual diminution in the size of the buildings and store racks at the left end of the record is very cleverly done. The figure at No. 9 is a baidarka inverted upon the rack so as to permit it to dry, while the rod upon the entrance to the house at No. 8 is a votive offering, erected to the memory of one of the household. The man upon the roof is speaking and gesticulating to those at No. 6.

The parties in the canoes, Nos. 10, 11, 12, and 13, are leaving to visit another village, indicated by a large habitation and storehouse, Nos. 14 and 15, about which the four human figures are portrayed as making gestures, both beckoning—by the hand raised—and pointing to the house, as if desiring the visitors to come there.

There is no evidence of want of food, or death, as indicated in some other records presented herein, but simply an exhibition of gladness at the return of friends or visitors who appear to have come within hailing distance.

The excitement caused by the arrival of two whaling ships is cleverly portrayed in plate 40, fig. 2. At No. 1 is a baidarka still upon the drying poles, while the natives at No. 2 are excitedly rushing toward it to put to water and to follow the other boats already under way to visit the ships. The boats Nos. 3 to 7 are all going along toward the anchored craft, Nos. 8 and 9, the anchor chains being designated by zigzag lines, thus more emphatically indicating *links*.

The canoes at Nos. 10 and 12 are coming from another direction, and the native on the bow of No. 10 is hailing the helmsman on the ship No. 9. The natives in both boats at the right have oars for rudders. No. 11 is a flock of birds.

The record reproduced in fig. 115 illustrates another method of giving information with regard to distress in another village, which occasioned the departure of the person by whom the notification was given. The designs were traced upon a narrow strip of wood, which was then

stuck upon the roof of the house belonging to the draftsman, and made to lean in the direction of the course to be taken.

This is shown in No. 1, the narrow projection upon the apex of the roof denoting the stick; No. 2 is the baidarka, containing the residents of the house; No. 3 is a grave stick, indicating a death in the settlement to which the trip is made, the stick being a votive offering, erected to the memory of the deceased; Nos. 4 and 5 denote the houses of the village, the triangular one being made by leaning together boards or slabs, and is termed a summer house, while the dome-shaped one, made more compactly and covered with turf, denotes a permanent or winter residence. Both kinds are represented, and by this method of synec-

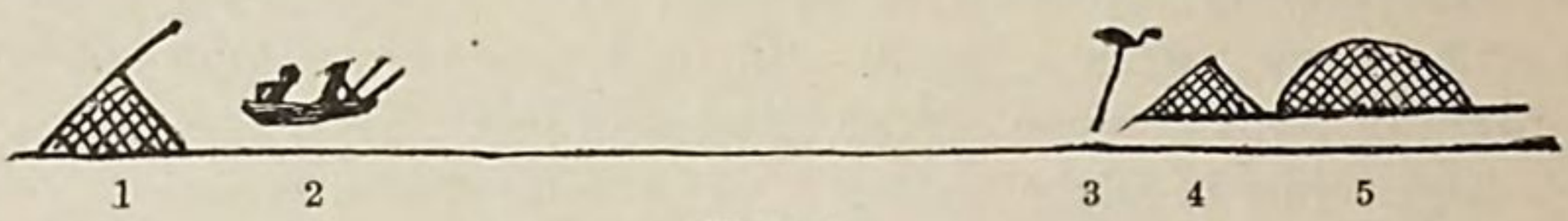


Fig. 115.

ALASKAN NOTICE OF DISTRESS.

doche the village is indicated by portraying only one of each kind composing the settlement.

The design shown in fig. 116 is in imitation of drawings made by the natives of southern Alaska to convey to the observer the information that the draftsman had gone away to another settlement, the inhabitants of which were in distress. The drawings were made on a strip of wood which was placed at the door of the house, where it might be seen by visitors or inquirers.

Vladimir Naomoff, the native to whom reference has before been made, and who drew for the present writer the specimen under consideration, gave the following explanation: No. 1 is a native making the gesture

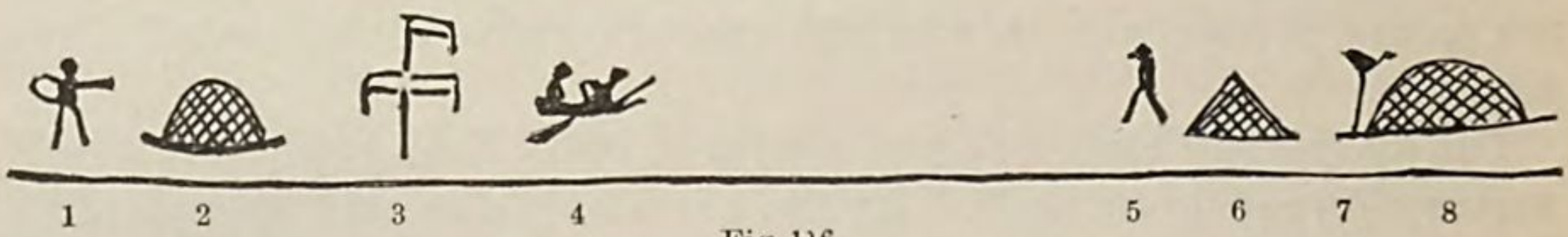


Fig. 116.

NOTICE OF DEPARTURE TO RELIEVE DISTRESS.

indicating *self* with the right hand, and with the left indicating the direction of going. No. 2 is the native's habitation, a winter or permanent residence, dome-shaped, partly underground, with the roof thinly covered with turf to keep out the extreme cold. No. 3 is a scaffold used for drying fish; upon the top of the pole is placed a piece of wood tied so that the longest end points in the direction to be taken by the relief party. No. 4 is the baidarka containing the party. No. 5, a native of the settlement to be visited. No. 6, a summer habitation. No. 7 is a shaman or grave stick, a votive offering erected to the memory of a recently deceased person, the cause which necessitated the journey. No. 8 is a winter habitation, in which the deceased had resided. The

winter residence, No. 8, together with the summer lodge in No. 6, denotes *the settlement.*

The record on plate 40, fig. 3, embracing Nos. 1 to 10, is similar in style to one explained by Naomoff, and pertains to the designation of geographic or rather topographic features of an area of country between that occupied by the recorder and another place to which reference is made.

Fig. 117.

WALRUS HUNTER ATTACKED.

No. 1 denotes three birds flying in the air, and No. 2 has reference to four seals, both groups of creatures being at a shore line, as the tree at No. 3 resembling a pine indicates. The group of trees immediately to the right denotes a grove or woods, indicated by a group of trees being placed close together. No. 4 is a human being and the intention of the recorder is to imply that natives are resident there—beyond the woods. Another grove or forest occurs beyond the settlement, as indicated by the group of trees at No. 5, beyond which another hamlet is situated.

Then comes another forest at No. 7, beyond which is a locality abounding in seals, No. 8. Beyond this is a range of timbered hills, the upland being indicated by a semicircle covered with short vertical lines to denote the timber.

No. 10 is an ornamental mark similar to No. 18 in import, and serves to denote the end of that particular record.

Fig. 118.

QUARREL OVER GAME.

A hunting scene begins with No. 11; the whale is moving toward the right, spouting, causing the walrus, No. 12, to move out of the way. Water fowl are seen at No. 13; while the elevations at No. 14, over which some birds are flying and at the left base of which is another walrus, appear to be rocks protruding from the sea.

At No. 15 are two other walrus, while at Nos. 16 and 17 are two approaching whaling ships.

The character at No. 18 concludes the history.

COMBAT.

But few illustrations occur in the ivory records in the National Museum collections in which personal combat is portrayed. Wrestling is shown, in one instance, under the caption of Pastimes and Games, while another denoting a struggle and combat with a walrus, both being in the water, is given below.

Fig. 117 represents an Alaskan in the water killing a walrus. The exploit was deemed of sufficient importance to perpetuate it by recording the illustration upon a slab of ivory, now in the museum of the Alaska Commercial Company, San Francisco, California.

Two men having a serious altercation over a seal are shown in fig. 118. One is unarmed, while the other has a bow and arrow which he

has threatened to use. The unarmed man's hands are in attitudes of gesture.

The two struggling men, plate 40, fig. 4, No. 1, appear in the attitude of wrestling, but the rapid approach of two others, No. 2, with spears in the attitude of charging or thrusting, seems to lend more seriousness to the record. The position of the legs of the combatants indicates the portrayal of considerable strength being exerted.

Nos. 3 and 8 are houses, the latter showing the column of smoke considerably curved downward to the right, denoting a strong breeze from the opposite direction. No. 4 is a water bird, probably a duck, while No. 5 denotes a seal. An animal of this species has been captured by the hunter, No. 6, who is dragging it home to the house, No. 8, while his wife—perhaps some other inmate—stands at the entrance and with both hands makes the gesture of *request or invitation* to enter, the hands being thrown toward the threshold. Nos. 9, 10, and 11 are dog sledges being brought back by traders from some other locality. The sleds are loaded. The attitudes assumed by the men in aiding the dogs in pulling are very cleverly depicted. Considerable effort is expressed in the leader of the sledge at No. 10, while pushing is done by other persons at the rear at Nos. 9 and 10. No. 11 is lightly loaded, as the

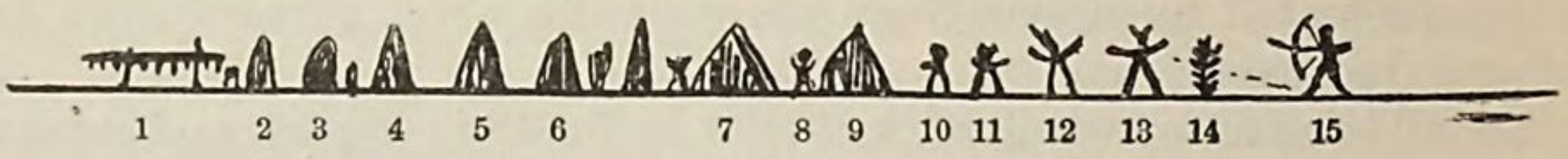


Fig. 119.

ATTACK ON VILLAGE.

owner is seated upon the sledge, while his companion is walking leisurely along behind.

The illustration in fig. 119 represents a village, upon which an attack is made by some natives from another locality.

The figure of a rack—a pole suspended horizontally upon two vertical forked posts—is shown in No. 1. Fish for drying are seen attached, the regularity of the short vertical strokes being evidence of the character of the food. Nos. 2 to 6, 7, and 9 are conical huts made of boards and saplings, such habitations as are erected by hunting parties when they find game sufficient in any special place to prompt their going to so much labor for their protection against rain or cold. In Nos. 8, 10, 11, 12, and 13 alarm is expressed by the signal for assistance, the arms being held aloft and waved to attract attention and to indicate that the presence of the beholder is desired.

No. 14 is a tree, from behind which the enemy shot an arrow which caused the alarm. The enemy had come up unperceived.

IDEOGRAPHY.

This subject embraces one of the most interesting in the entire realm of pictography. Among the Eskimo there is less evidence of ability in this direction than among some of our Indian tribes. Gesture signs

are common to all mankind, but in the greater part of the United States the sign language is rapidly falling into disuse, both because of the destruction of the buffalo, the pursuit of which was participated in by many tribes of diverse languages, a condition which brought about a most highly developed gesture language, and also because of the rapid settlement of the country and the consequent restrictions of Indians traveling from place to place, which also served to keep alive gesture speech. The adoption of the Spanish lan-

Fig. 120.

HUMAN FIGURES MAKING GESTURES.

guage by the Indians on the southwest border, and the Chinook jargon in the north, also helped to resume the need of a resort to gesture, the present methods of oral speech, mutually intelligible, being vastly superior and more satisfactory.

The use of gesture speech by the Eskimo is well known, and repeated instances showing the attempted reproduction, graphically, of gesture signs occur in the ivory records, some examples of which are reproduced.

To facilitate further study in this line of investigation, the writer submits a collection of gesture signs used by the Eskimo and other tribes of southern Alaska, a collection made some years since, though hitherto unpublished.

PICTOGRAPHS OF GESTURE SIGNS.

No. 1 of fig. 120 represents a shaman waving his hands and arms, as if he were stirring up the air above his head, the motive being the invocation of benign spirits to aid him in his work. The rested figure shown in No. 2, denotes the man making application for aid, and his arms are extended upward in like manner, but in this instance denoting *supplication*, the difference between the two being that the latter is rested upon the ground to indicate his *asking for aid*, whereas the shaman is portrayed not only erect, but in the attitude of dancing, with his song and incantations.

Fig. 121.

SIGNAL OF DISCOVERY.

The illustration given in fig. 121 is taken from an ivory drill bow in the National Museum, marked as from Norton Sound, Alaska. The figure represents the gesture sign, or signal of discovery. In this instance the game consists of whales, and the signal is made by holding the boat paddle aloft and horizontally.

Fig. 122 represents a number of natives fishing through the ice for seal. The individual represented at No. 1 is dragging an animal out of the water, a hole having been cut for breathing place at which these animals make their appearance. No. 2 has a seal upon the ice and appears to have great difficulty in pulling it along. No. 3 is preparing to spear an animal, his watchful attitude being apparent. No. 4 is holding aloft his harpoon or lance, making a signal that he has discovered game, or hears it, and thereby warns others near by to be silent.

No. 5 is about to thrust his lance through the hole into the water beneath. No. 6 has stuck his harpoon into the ice and is erecting a shade over the hole so as to permit him to see beneath, while No. 7 has thrust his weapon downward through the ice.

Mr. Dall[1] mentions a practice adopted by the Aleuts when hunting otter, by which the fact of having thrown the spear is intimated to his companions, when they will at once paddle and form a circle around

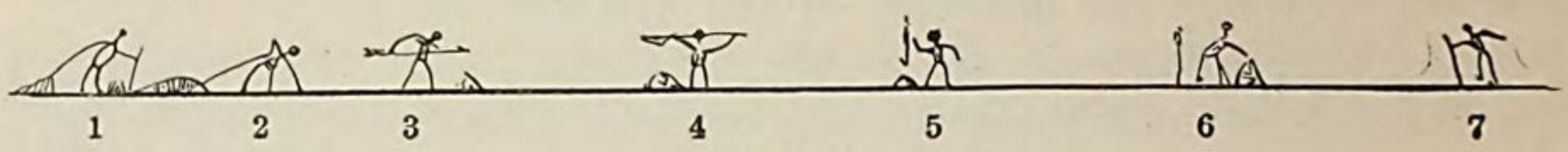


Fig. 122.

SEAL FISHING AND SIGNAL.

the spot so as to attack with spear the animal when it returns to the surface to breathe. The signal is graphically portrayed in the following illustration, in which several hunters had such exploits, and also in many others, in some of which, however, the signal may also denote the idea *to come*, a call for assistance when the animal is thought to be liable to escape or to be unmanageable.

The fishermen found a small school of whales, as shown in fig. 123,

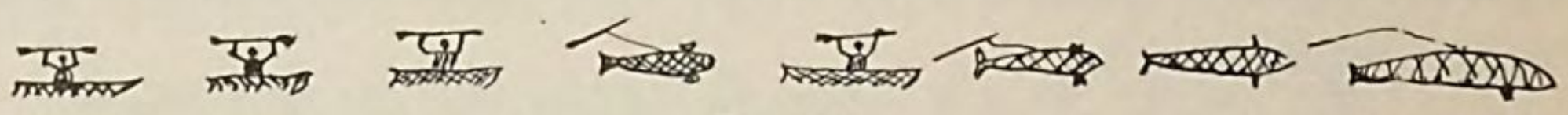


Fig. 123.

SIGNALING FOR ASSISTANCE; WHALES.

and three of them have been harpooned while a fourth is escaping. Help to secure the monsters is required, and all of the occupants of the boats are making the signal for assistance by holding horizontally above the head the boat paddle. This signifies *come*, and also, under other circumstances, game found.

Fig. 124 represents a record of a hunt, made for the present writer by Vladimir Naomoff, in 1882. The drawing is in imitation of similar

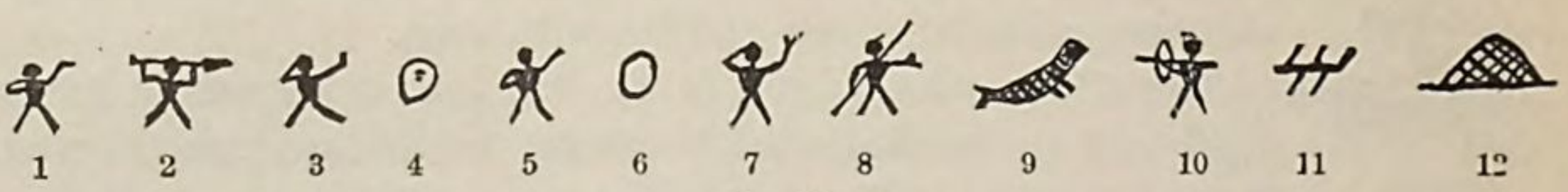


Fig. 124.

ALASKAN NOTICE OF HUNT.

ones made by the natives of the southern coast of Alaska, to inform their visitors or friends of their departure for a purpose designated. They are depicted upon pieces of wood, which are placed in conspicuous places near the doors of the habitations.

The following is the explanation of the characters: No. 1, the speaker, with the right hand indicating himself and with the left pointing in the direction taken; No. 2, holding a boat paddle, *going by boat;* No. 3, the speaker holding the right hand to the side of the head, to denote *sleep*,

[1] Alaska and its Resources, pp. 490, 491.

and the left elevated with one finger erect to signify *one* night; No. 4, a circle with two marks in the middle, signifying an island with huts upon it; No. 5 same as No. 1; No. 6, a circle to denote another *island* where they touched; No. 7, similar to No. 3, with an additional finger elevated, to signify *two nights* or *sleeps;* No. 8, the speaker with his harpoon, the weapon with which he sometimes hunted, and with the left making the gesture sign to denote *sea lion.* The hand is held edgewise, with the thumb elevated, then pushed outward from the body in a slightly downward curve. No. 9 represents a *sea lion*, which the hunter, No. 10, secured by shooting with bow and arrow. No. 11 is the

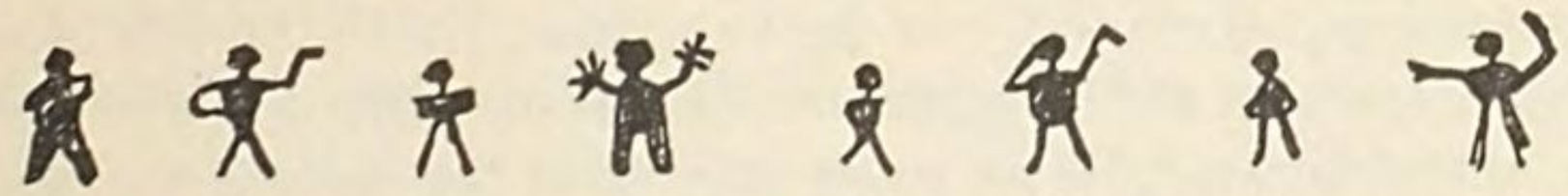


Fig. 125.

ALASKAN NOTICE OF DEPARTURE.

boat with two persons in it, the paddles projecting downward beneath it. No. 12 is the winter habitation of the speaker.

The record given in fig. 125 was also drawn for the present writer by Vladimir Naomoff.

Nos. 1, 3, 5, and 7 represent the person spoken to, and no arms are indicated, as no response is supposed to be made by him. No. 2 indicates the speaker with his right hand to his side or breast, indicating *self*, the left hand pointing in the direction in which he is going. No. 4, both hands of the speaker are elevated, with fingers and thumbs extended, signifying many. When the hands are thus held up, in sign language, it signifies *ten*, but when they are brought toward and backward from one another, many. Among the "Plains Indians" of Indian Territory, when both hands are thus held up for *ten*, and then thrown downward to the left, it signifies *ten* times *ten* or *one hundred.* The

Fig. 126.

ALASKAN NOTICE OF HUNT.

latter practice of indicating any number multiplied by *ten*, by thus throwing to the left both hands, has not been found to obtain among the Alaskan natives. No. 6, the right hand is placed to the side of the head to denote *sleep* or *night;* in this instance denoting *many sleeps*, or, in other words, *many nights and days;* the left hand points downward to denote *at that place.* No. 8, the right hand is directed toward the starting point, while the left is brought upward toward the head—*to go home*, or *whence he came.*

The drawing represented in fig. 126 was made by an Alaskan native to illustrate that he contemplated making a journey to hunt, and the

result of that tour. No. 1 is an undulating line extending from left to right, and represents the contour lines of the country and mountain peaks; No. 2 represents the native going from home; No. 3, stick placed on a hilltop, with a bunch of grass attached—so as to be more readily visible—pointing in the direction he took; No. 4 represents the native of another settlement, with whom the traveler remained over night; No. 5 is the habitation of the figure in No. 4; No. 6, a long vertical stroke, representing the end of the first day, i. e., the time between two days—rest; No. 7, the traveler is again shown to be on the way; No. 8, making a signal that on the second day (the right hand raised, with two fingers extended, *two*) he saw deer, No. 9, the left hand pointing in the direction of the animal. No. 9 represents the deer facing the hunter, which attitude is an indication that the animal was secured.

In fig. 127*a* is indicated the course pursued by one of a hunting party, who decided to return home, leaving information *en route* as to direction. He ascends the nearest elevation of ground, a hilltop or ridge, and ties a bunch of grass or other light colored material to the top of a long stick or rod. The lower end of the stick is placed firmly in the ground, leaning in the direction taken. When another hill is ascended, another stick with similar attachment is erected, again leaning in the direction to be taken. These sticks are placed at proper intervals until the village is sighted, the left hand semicircular or dome-shaped body denoting the settlement shown by synecdoche.

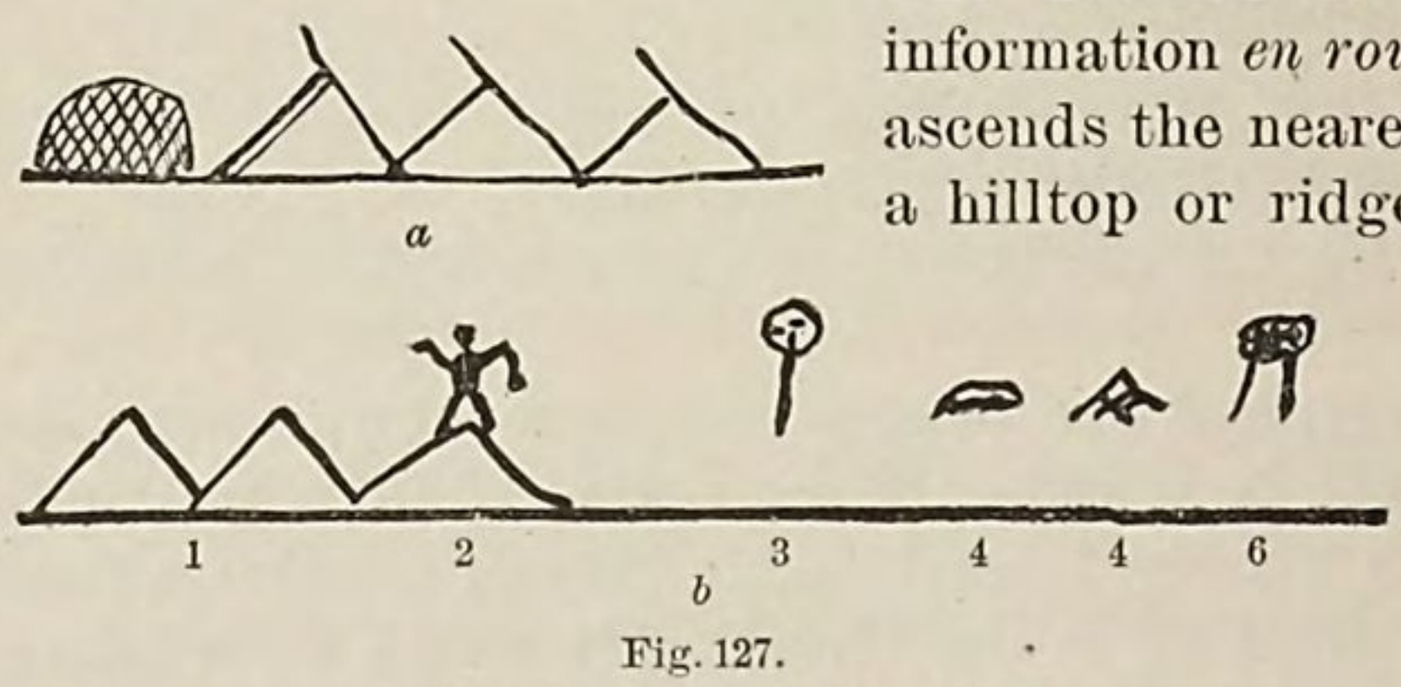


Fig. 127.

ALASKAN NOTICE OF DIRECTION.

The drawing shown in fig. 127*b* was also made by Naomoff for the present writer, to illustrate that a settlement had been attacked by a hostile party and finally deserted. The last one to leave prepares the drawing upon a strip of wood to inform his friends of the resort of the survivors. No. 1 represents three hills or ranges, signifying that the course taken would carry them beyond that number of hills; No. 2, the draftsman, indicating the direction, with the left hand pointing to the ground, one hill, and the right hand indicating the number *two*, the number still to be crossed; No. 3, a circular piece of wood or leather, with the representation of a face, placed upon a pole and facing the direction to be taken from the settlement. In this instance the drawing of the character denotes a hostile attack upon the village, for which misfortune such devices are sometimes erected. Nos. 4 and 5 indicate summer and winter habitations. No. 6 is a storehouse erected upon upright poles so as to be beyond the reach of predatory animals. The latter device is used by the coast natives generally.

Fig. 128 represents hunters who have been unfortunate and are suffering from hunger. The figures are scratched or drawn upon a piece of wood, and placed where there is the greatest chance of its discovery by passers. The stick bearing the devices is stuck in the ground and inclined toward the shelter of the sufferers. The following is the interpretation of the record:

Fig. 128.

STARVING HUNTERS.

No. 1 is a horizontal line, and denotes a canoe, indicating that the persons are fishermen; No. 2, a man with both arms extended, signifying in gesture language *nothing*, corresponding to the ordinary gesture for negation; No. 3 is a companion with the right hand placed to the mouth, signifying *to eat*, the left pointing to the house occupied by the hunters, and indicating *at that place* there is nothing to eat; No. 4 represents the shelter occupied by the sufferers.

The record in fig. 129 is similar to the preceding and is used for a

Fig. 129.

STARVING HUNTERS.

like purpose. No. 1 represents the baidarka, showing double projections at the bow in imitation of some forms of the canoe, the two strokes at the other end representing the occupants of the boat. No. 2 represents a man making the gesture for *nothing*, both hands thrown horizontally outward toward either side. No. 3 has his right hand placed to the mouth to denote *to eat*, the left pointing to the habitation, No. 4, indicating that there is *nothing to eat in that house.*

Fig. 130.

HUNTING SCENE.

This is used by the Alaskan coast natives generally.

The record portrayed in fig. 130, refers to the success of the hunter shown in No. 3. As elsewhere stated with reference to the position or attitude of animals, it will be perceived that the two deer, represented in Nos. 1 and 2, were secured by shooting, the gun being indicated in No. 3. No. 4 represents a man with a gun held transversely above the head, this being a signal to denote *come*, or *approach*, while the individuals in Nos. 5, 6, and 7 are in various attitudes with extended arms

hands, and fingers. No. 5 is represented in the act of making a gesture synonymous with that in No. 4, attracting attention and beckoning to another to approach.

No. 6 likewise shows the gestures to *come* or *approach*, the direction of the hands being earthward, corresponding exactly with a common and widespread gesture for the person called *to approach stealthily*. Indications by gesture *to come* are uniformly, amongst the North American Indians and Innuit, made by turning the palm downward and drawing the extended index finger toward the body, as if directly indicating the path upon which the person beckoned to is directed to approach.

In No. 7 the gesture appears still more excited, and the skill in pictorial expression is certainly very cleverly indicated. The right hand of the figure calls to the beholder *to come*, while with the left hand, as with the right, the number *four* is indicated, as is also the case with the figure in No. 6. The reason of this is apparent in Nos. 8, 9, 10, and 11, denoting four black or perhaps cinnamon bears, whose heads are directed away from the group of human figures, and especially so from No. 3, who thus intimates that he was informed by his

Fig. 131.

SIGNAL OF DISTRESS AND WANT.

friends of four bears having been seen in a direction pointed to by the left hand of No. 7, but which he did not secure.

Had the heads been directed toward the speaker or owner of the record, as in the instance of the two deer, the information would have signified that the bears had been captured.

An interesting and rarely found engraving is reproduced herewith in fig. 131. Specimens of like import were described to the present writer, and pencil drawings made to illustrate the manner in which the Aigaluγamut Eskimo of the southern shores of Alaska convey the intelligence that they want assistance and that they possess nothing.

The figures shown in Nos. 1 and 4 represent the habitations of two families, the storehouse, No. 2, being common property. Nos. 3, 5, 6, 7, and the human figure standing upon the habitation marked No. 4 are making signals, all excepting No. 7, calling attention by their uplifted hands and arms, while No. 7 has his arms extended, to denote *nothing*, this being a universal gesture for that idea. The Egyptian hieroglyphs and the Maya pictograph, as mentioned by De Landa in his representation of alphabetic characters, are drawn in the attitude of outstretched arms, no other part of the body being present or necessary.

The conventional gesture sign used by the Indians of the United States is to throw the flat right hand outward to the right, the hand in the first position being in front of the right side at the height of the elbow.

Some tribes and European nations who are still profuse and prolific in gesture as an accompaniment to speech frequently employ both hands, moving them outward from the front toward either side, bringing the palms uppermost, and at the same time giving the shoulders a slight shrug, an unconscious though effective emphasis to the gesture.

The accompanying figure (132) represents at Nos. 2, 3, and 4 the habitations of a village of which the author or owner of the record is a member. No. 1 denotes a water fowl. No. 2 is a habitation, from the roof of which project three shaman sticks, erected as votive offerings to deceased members of the household. The owner is also apparent on the roof, occupied by domestic duties. No. 3 is another house, from the roof of which is seen the issuings of smoke. No. 4 is another long house, from the right hand end of which is seen projecting a stick indicating the direction taken by the owner in his departure for another locality. No. 5 represents a swan (the uppermost figure), which was observed by the traveler on his journey, as also an animal, the specific name of which could not be ascertained. No. 6, however, is the traveler

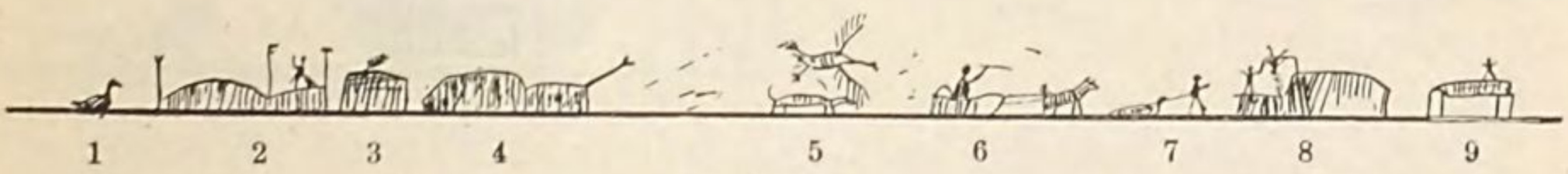


Fig. 132.

NOTICE OF DEPARTURE TO VISIT NEIGHBORING VILLAGE.

himself seated on his dog sledge, holding in his hand a whip, with which he is urging the dog to hasten, as the end of the journey is near at hand. He is preceded by another native (No. 7), whom he caught up with, who was dragging home some game. No. 8 is the house of the person whom the traveler is going to visit. The left-hand figure sees him coming, and shows his pleasure by extending his arm horizontally, to inform others of the village that he sees the stranger approaching. The figure on the meat pole is said to be exceedingly pleased at the news, and is seen performing some athletic feat on the horizontal pole mentioned. Another of the household is occupied at the storehouse (No. 9) in preparing for the storing of the game captured by No. 7.

Smoke observed issuing from the roof of the habitation No. 8 is similar to that in No. 3, and resembles also in graphic execution the tail of the dog in No. 6. Upon comparison it will be found that the water thrown up by a whale in blowing is represented in like manner.

ABSTRACT IDEAS.

But few instances denoting, or perhaps even suggesting, abstra ideas have been met with. The following examples embrace also gesture language as well as an attempt at recording subjective ideas.

It is seldom that the indication of speech is attempted by the Eskimo, but in fig. 133 an excellent portrayal of the idea of urging by means of the voice, or calling, is given. The two men are traveling with a sledge and three dogs, the foremost of the figures having a line extending from the side of the head—presumably the mouth—to thele ader of the dogs. The idea is also exhibited in other pictographs made by Eskimo, and is not of rare occurrence in pictographic drawings of the natives of Kadiak, as stated by Vladimir Naomoff.

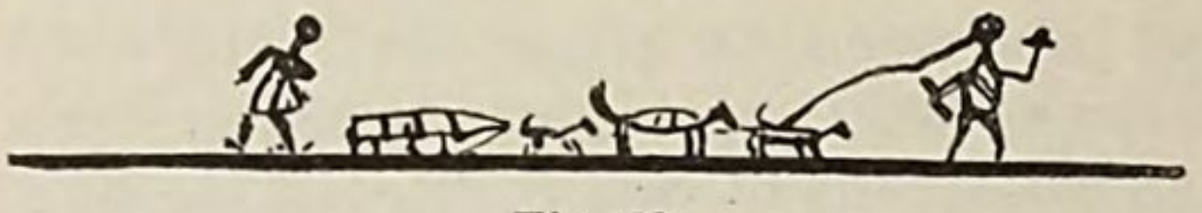
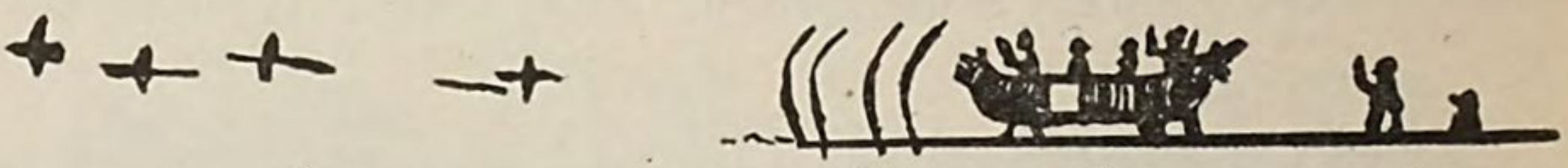


Fig. 133.

NATIVE SPEAKING TO DOG.

Voice lines are frequently and similarly portrayed by the Cheyenne, Arapaho, and Dakota Indians. In pictographs relating to hunting expeditions and pastimes the first-named tribe is perhaps one of the most advanced in expressing pictorially some of the more difficult ideas, not only objective ones but subjective as well.

The line extending from the mouth to denote *speech* is a visible presentation of the common gesture sign for the same idea, made by passing forward from the mouth the extended index finger.



1 2 3 4

Fig. 134.

SHORE LINE, OR WATER MARKS.

The elevated left hand of the leader of the party is an additional indication that he is urging the dogs to quicken their pace, or perhaps to exert greater effort in pulling the sledge.

The illustration in fig. 134 represents several men carrying an umiak. The vessel at No. 3 is raised above the ground, the four lines resembling props or supports being the men's legs. The boat is being carried toward the water, the shore lines being indicated by the vertical curves at No. 2. The artist felt that he had not the skill in perspectively showing the water's edge, and so places the water lines in a position in which they may clearly be observed. The four crosses at the left of the engraving denote waterfowl, while the figures at No. 4 denote a standing one in conversation and gesture with the departing ones, and another seated upon the ground.

Fig. 135.

A CAPTIVE WHALE.

A good portrayal of the whale is given in fig. 135. The spray—a small character for which is placed over the highest ridge of the head—is portrayed to specify the nature of the mammal. The oblique line protruding from the back is the harpoon which was used in the capture.

An interesting fact connected with this pictograph is the representa-

tion of death, i. e., a *dead* whale or *killed* whale, determined by the presence of the instrument with which death was accomplished. This is rare in Innuit pictography, but frequent in Indian art.

Plate 68, fig. 3, is a large bag handle from Cape Nome. This is particularly interesting from the fact of the presence of a variety of human forms, some resembling the bird-like forms or wings very much resembling the characters for "Thunderbird," as portrayed by the Ojibwa and other Algonkian tribes. The left half of the lower face of the bow represents umiaks with hunters and harpoons. Near the middle of the record is a very gracefully drawn whale tail up in the air, as the animal appears to be diving while the hunter is throwing his harpoon into its body. Upon the upper half of this same side of the bow, the two sides being divided by parallel median lines, are a number of whale tails, indicating whales that have escaped, while others are shown in the attitude of swimming. Near the left is a very conspicuous umiak occupied by four hunters. Over the bow of the boat projects a large harpoon resting upon the harpoon rest. This illustration is reproduced elsewhere with further explanation. The upper or convex side of the bow is also divided into two longitudinal ridges or faces. Upon one of these is the portrayal of umiaks rowing toward the left, one hunter harpooning an animal, while at the extreme left four hunters appear to be carrying an umiak toward the water, as if preparing for departure. The right half of the record appears to represent the other line, as there are several habitations with smoke rising from the smoke holes, votive offerings attached near by, as well as scaffolds. In this instance the latter are evidently for burial purposes and not for food. This is made clear from the fact that the votive offerings are placed in close contact with the respective burials. A little farther to the right are three men returning with a sledge and a single dog, two additional persons appearing to lag behind, as if wearied or bent with age. The representation of a human figure carrying a staff is a common indication of age or indigence, and occurs very frequently in Egyptian hieroglyphs, as well as in the mnemonic. One of the individuals shown in the Eskimo record stoops forward very much, and this is believed to indicate age. Immediately behind him is the rude outline of a fox, which may have reference to his being a shaman, or he may possibly have captured such an animal. To the right is a figure denoting a whale's fluke, indicating that the hunters are also whalers, because to the right of this fluke is an umiak with two persons sitting in it using the paddle. The hunter in the bow of this boat has his paddle projecting forward and not quite touching the water, the perspective being admirably represented, as it does not cut through and destroy the structure of the boat. Upon the other face of this same bow are several umiaks in pursuit of a whale and several natives dragging seals, two of these natives having attached to the rear part of their bodies appendages drawn exactly like a dog's tail or a fox's

tail, which indicates that the natives belonged to those classes referred to by Captain Beechey in his Notice of the Indians of Schisma Reef Inlet, who wore such ornaments attached to their clothing, giving them a ridiculous appearance, and may probably have occasioned the report of the Chukche that the people of that region have tails like dogs.

The remaining figures upon this bow consists of human beings and a few animal forms, near the extreme right being a curious outline of an umiak, the occupants of which are shown with extended arms from which numerous short lines project. These may denote the fur upon the sleeves of the dress, or they may have other signification, or they may possibly be merely a fancy of the engraver.

SHAMANISM.

Although the Eskimo are extremely superstitious, and numbers of them are recognized shamans of ability, yet there seems to be a general scarcity of pictographic matter pertaining thereto. This is strange, too, as among some peoples the records are almost entirely devoted to shamanistic ceremonies, and in several instances, as among the Ojibwa, for instance, the mnemonic and hunting records—all shamanistic—are the only relics of pictography at this day.

MYTHIC ANIMALS.

But a few specimens portraying mythic animals occur, the following being the most conspicuous:

The accompanying specimen, on plate 72, is from Cape Prince of Wales, and was collected by Mr. E. W. Nelson. It represents a whale-line guide, and is used on the bow of an umiak used for whale hunting. The two pieces of ivory, measuring in height 4¼ inches, are ingeniously joined together by mortising, the slot in either piece being made so as to face its fellow; and into these slots is afterwards placed a piece to hold both sides in place, by being secured by ivory pegs which pass through at right angles to the connecting piece, as will be observed in the illustrations. In the lower cut will be noticed an additional piece, larger than the round pegs, which consists of a large glass bead.

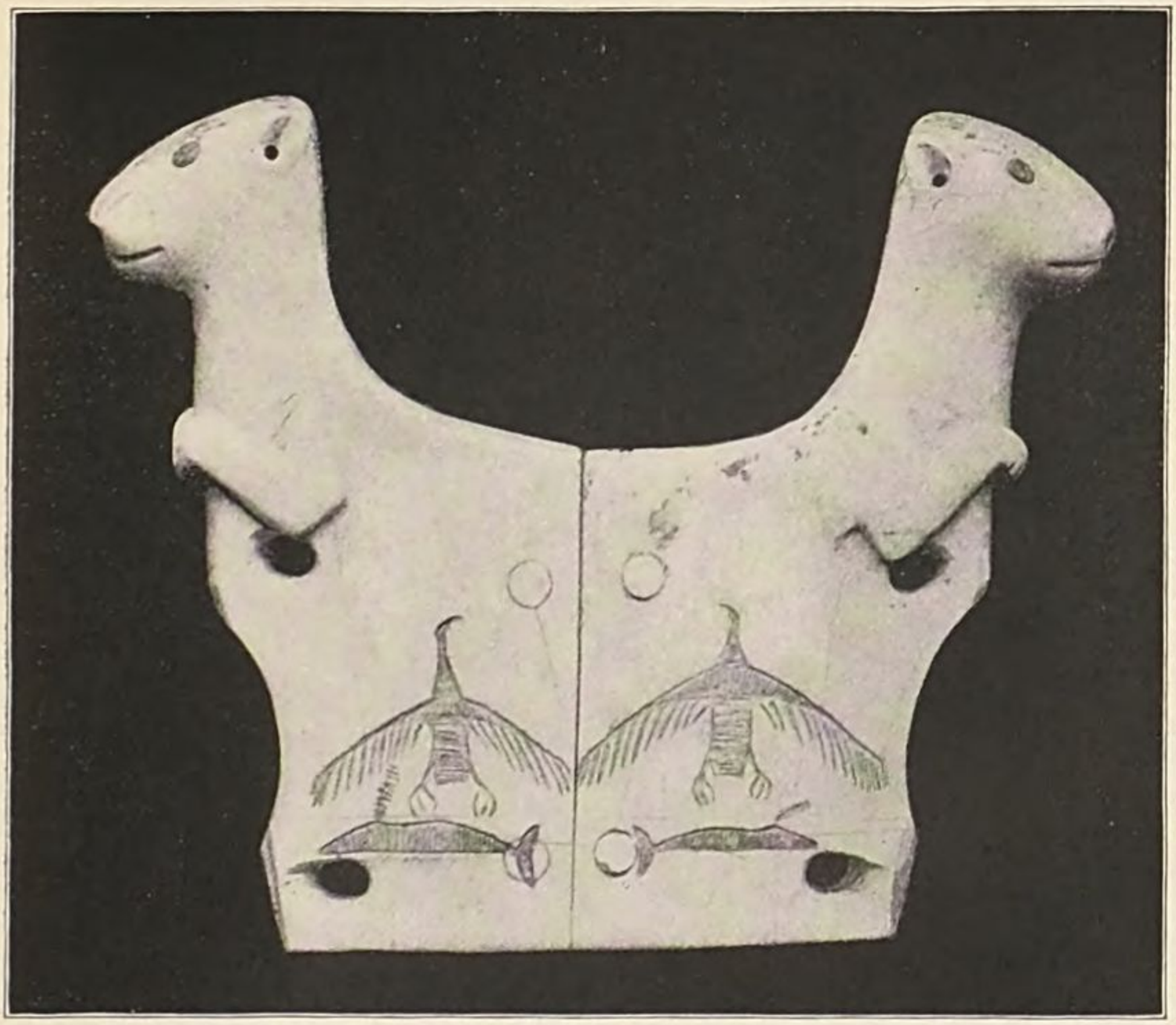
The horns of the specimen represent the heads of a mammal, the eyes consisting of wooden pegs, while the nostrils are drillings filled in with pegs which appear to have been blackened.

In the upper figure are portrayed two thunderbirds or eagles, each descending to grasp a whale, the latter having spray in the act of being ejected from the "blowholes." In the lower figure the birds are represented as having secured the whales and have risen into the air, as seems indicated by the form of the whale on the right-hand side. The engraving of the characters is decidedly bold and expressive, the entire surface of the etched portions still retaining more or less black color. The general artistic form of the bird is very like that usually

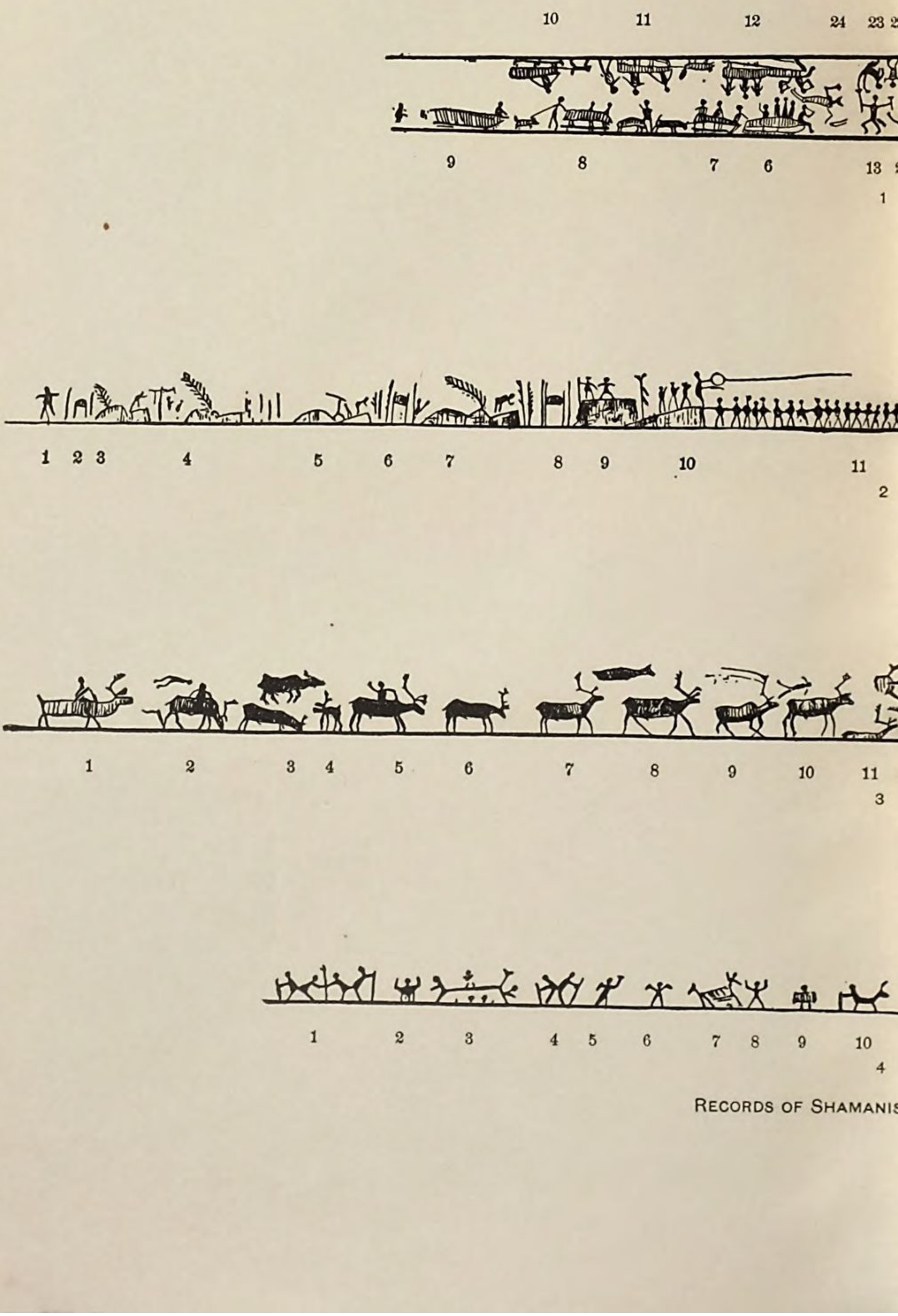
EXPLANATION OF PLATE 72.

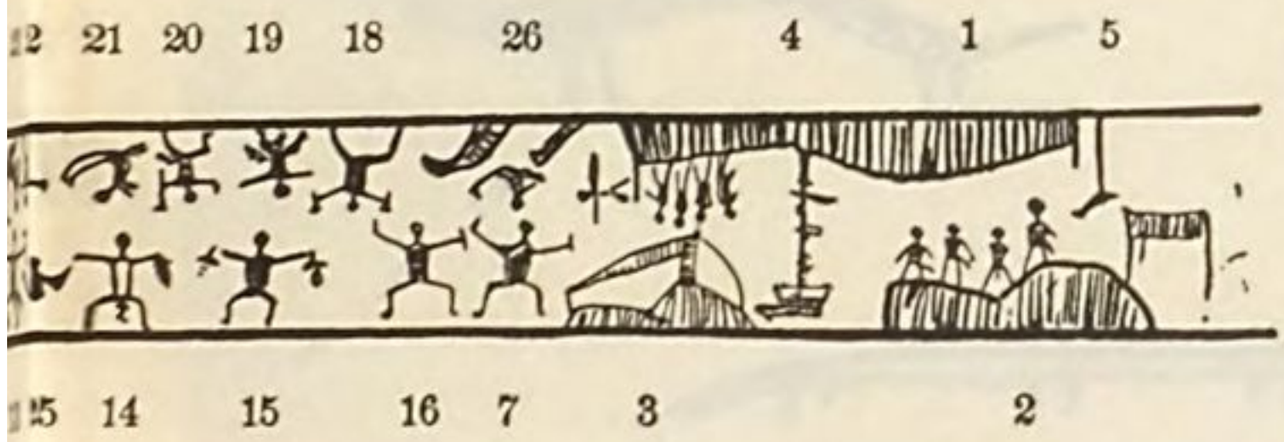
Figs. 1 and 2. OBVERSE AND REVERSE OF WHALE-LINE GUIDE, PLACED ON BOW OF UMIAK, USED IN HUNTING.

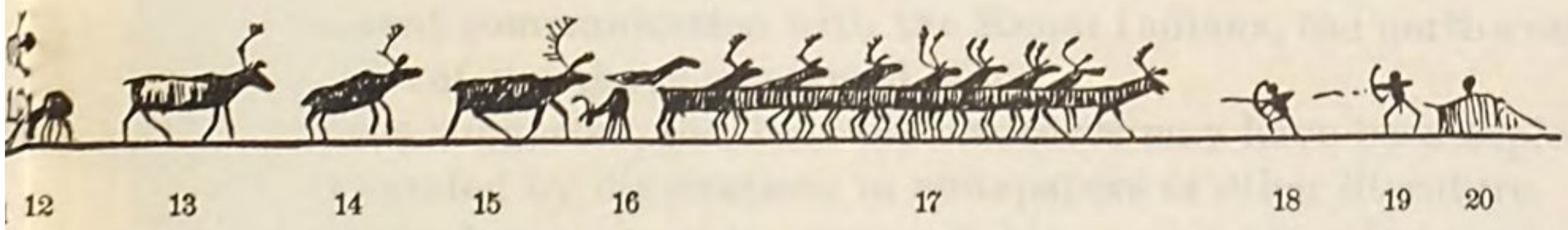
(Cat. No. 48169, U. S. N. M. Cape Prince of Wales. Collected by E. W. Nelson.)

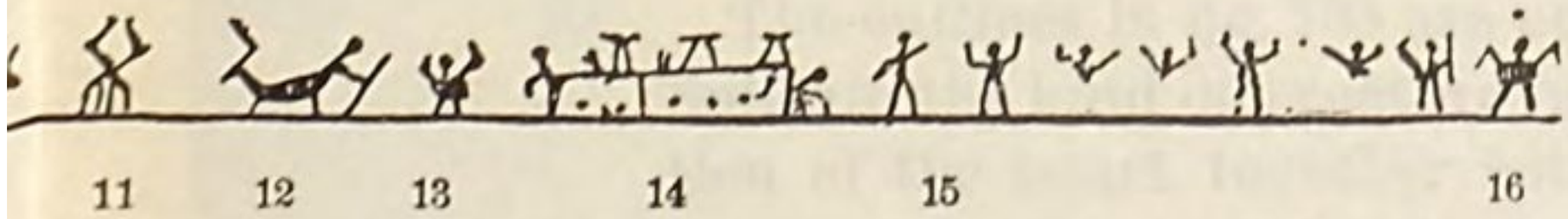


MYTHIC BIRD AND WHALE ON HARPOON REST.


10 11 12 24 23
9 8 7 6 13
1
1 2 3 4 5 6 7 8 9 10 11
2
1 2 3 4 5 6 7 8 9 10 11
3
1 2 3 4 5 6 7 8 9 10
4

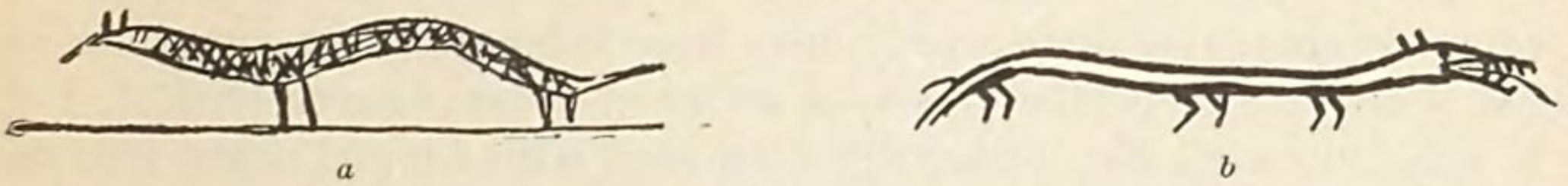






ISTIC CEREMONIALS.

found in Algonkian pictographs, and does not keep in general harmony with Alaskan art, although the whales, which are true, typical, Alaskan examples, seems at once to repel the suspicion of intrusive characters, or such as are non-Innuit.



a *b* *c*

Fig. 136.

MYTHIC SERPENTS.

The four perforations in the piece are for attaching it to the gunwale of the umiak.

The illustrations given, *a*, *b*, and *c*, of fig. 136, represent mythic serpents, and are described in some of the folk tales. *c* very much resembles the "water monster" of the Ojibwa, though it is scarcely possible that the cult of the latter could have been conveyed, even in the slightest degree, to the Eskimo. Other intervening tribes, notably so those of the Athabascas family, have serpent myths, and from this people the idea may have been conveyed to the Innuit, especially as the latter are in frequent communication with the Kenai Indians, the northwesternmost tribe of the above-mentioned famiy.

Fig. 137.

MYTHIC ANIMAL DEVOURING NATIVE.

It has been suggested, too, that the creatures may have been copied from or suggested by illustrations in newspapers or other literature.

In fig. 137 is shown a mythic creature taking up a man and preparing to devour him. The belief in water monsters survives among the natives of the southern coast, opposite the island of Kadiak, a creature resembling somewhat a reptilian form in imitation of an alligator, of which illustrations are also given elsewhere.

Fig. 138.

MYTHIC ANIMAL.

The outlines in fig. 138 are not sufficiently specific to indicate the kind of creature intended, but the indication of the heart, together with the *voice line*, or *life line*, extending therefrom to the open mouth, is very much like some of the figures found among the Zuni and the Ojibwa.

This peculiar line denotes the animal to be of a mythic or, perhaps, sacred character, and has reference to ceremonials known only to the shamans or members of certain cult societies.

In plate 66, fig. 2, is the engraved figure of a seal, within which are various objects, animate and inanimate, resembles that class of sacred objects often carried by the Ojibwa jes'sakīd or juggler.

Fig. 139 represents a series of characters only part of which are intelligible. No. 1 is evidently—from the curve of the horns—a reindeer, while No. 2 is explained to be a mythic animal—a serpent, as similarly elongated quadrupeds have been interpreted by some natives. No. 3 appears to be the first of a series of seven figures (Nos. 3, 4, 5, 7, 8, 9, 10) which are apparently decorated with fringed coats, like the neighboring Kolosh and Kenai Indians, and marks of bird or other faces upon their heads.

No. 6 is an aquatic bird in flight, which at once shows the difference in execution of ideas, the human figure being bifurcated as above indicated. No. 11 is a mammal, resembling the usual character denoting the *putoridæ*.

CEREMONIALS.

Mr. Murdoch remarks that at some of the ceremonial dances of the Eskimo, at Point Barrow, the participants wear masks, some of which are sometimes decorated with slight ornamentation.

Fig. 139.

MYTHIC CREATURES.

Gorgets are also worn, and fig. 3 represents an excellent example with ornamentations relating to fishing and hunting. The same author remarks, also, that the more southern Eskimo of Alaska are in the habit of using in their dances very elaborate and highly ornamented and painted masks, of which the National Museum possesses a very large collection. The ancient Aleuts also used masks. On the other hand, no other Eskimo, save "those of Alaska, ever use masks in their performances, as far as I can learn, with the solitary exception of the people of Baffin Land, where a mask of the hide of the bearded seal is worn on certain occasions. Nordenskiöld saw one wooden mask among the people near the winter quarters of the *Vega*, but learned that this had been brought from Bering Strait, and probably from America."[1]

The dancing mask previously referred to and shown in plate 16 is from Kuskoquim, and was collected by Mr. E. W. Nelson. The specimen is of interest from the fact that it constitutes perhaps the only example of woodwork bearing pictographs in color. The specimen, including the lower pendant, measures about 9½ inches in length, the width of the largest piece—bearing the eyes, nose, and mouth—being almost 3 inches across. Upon the top and right side are a number of punctures for the insertion of feathers, only three of the latter being now present. The four slats of wood are attached to the main piece

[1] Ninth Annual Report of the Bureau of Ethnology, 1887–'88, 1892, p. 370.

A

B

C

SHAMANISTIC CEREMONIALS.

by means of thin strands of bark. The several pieces were rudely besmeared with a white chalky paint, while over several portions of them are markings in black.

Upon the left cheek of the mask are four vertically arranged figures of masks, rather grotesque in expression. The lower one is not as elaborately drawn as the others. Upon the upper piece of wood, upon the left of the mask, is an outline of an umiak, with sail spread. In the bow of the boat is the figure of a native with hands and arms uplifted, while another figure is visible in the stem acting as helmsman.

The markings upon the remaining piece are probably meaningless.

Among the Indians of the Northwest Coast, the Iákutat and Tshilkat, and to a certain extent the neighboring tribes, masked dances are of frequent occurrence, the purport being usually ceremonial; though at this day much of the former sacredness of these ceremonials has become debased. Among the Eskimo ceremonial dances are of great importance, though not of such frequence as among their southern neighbors.

In fig. 140 the vertical strokes shown by Nos. 1 and 10 represent the timbers supporting the structure within which the dance takes place, not sufficient space being available upon the specimen of ivory to rep-

Fig. 140.

CEREMONIAL DANCE.

resent the roof. Nos. 2, 7, and 9 are the drummers, each armed with a flat, tambourine drum, generally used by the shamen everywhere. Nos. 3, 4, 5, 6, and 8 represent the dancers, marked with what appears to be bear heads—made of some light wood, such as cedar. The attitudes of the dancers are remarkably clever and lifelike, showing the various attitudes, both natural and assumed, in imitation of the animal represented, as may be found at any dance of aboriginal peoples when they attain that particular degree of enthusiasm consequent upon and perceptible to the beholder after a feast.

This engraving, plate 73, fig. 2, is one of the most interesting on account of the portrayal of the transmission of sound, a stage of development found in but few instances in Alaskan pictographs, but of frequent occurrence among the Cheyennes, and other neighboring tribes, in the vicinity of Fort Sill, Indian Territory, and other posts farther north.

The entire record relates to a ceremonial dance, held on account of a sick person, and the indication of the village houses and sledges of visiting natives.

The narrator is indicated at No. 1, his arms outstretched to embrace the surrounding area as the place where he was, and which, perhaps,

is his residence also. Nos. 2, 6, and 8 denote scaffolds for food, the accumulated material being apparent upon the transverse poles. At the residence at No. 3 smoke is emerging from the smoke hole in the roof, and someone is also upon the roof of the entrance reaching outward toward what may have been intended for a scaffold, but which, because of erosion, had become partly obliterated, as have also portions of the human beings beneath. The next house, No. 4, also has a column of smoke rising from the smoke hole, while several vertical lines before the entrance indicate the original portrayal of the necessary storehouse or food scaffold. No. 5 is another permanent habitation, while at No. 7, over the roof of the entrance to the house, is the outline of a man, horizontal and with the hand thrown downward as if making a common gesture sign for *lying down*, or *to lie there*, having reference perhaps to the recumbent position of the occupant, who may be sick and for whose benefit the ceremonies are in operation. A heavy column of smoke is issuing from the chimney.

Upon the house No. 9 are two persons apparently interested in something or someone at No. 7, no doubt referring to the sick man. At No. 10 is designated the entrance to the house No. 9, and upon the roof are four persons; the one at the right holding in one hand tambourine drum, while with the other hand he is beating it, the sound therefrom passing forward over the group of dancers before the house. In the rear of the drummer are three assistant musicians, and from the absence of drums or rattles they appear to be singers, the belief being furthermore strengthened from the fact that each of the three has an arm or hand elevated; the one at the right appearing to place his hand before his mouth to denote in gesture language *speech*, *voice*, *song*, a common portrayal in various Indian pictographs, as well as Maya, Mexican, Egyptian, and Hittite hieroglyphs and objective representations of *voice* in various forms. The remaining figures also appear to have their hands directed upward before the face, an approach in gesture to the preceding. The sign for sing, singing, is made by holding the palm upward and passing the hand upward and forward from the mouth, though beginning before the neck and passing at from 6 to 10 inches before the mouth.

The narrow vertical line with streamers of cloth or calico attached, and surmounted by the wooden effigy of a bird, is a votive offering or "shaman stick" erected upon the roof of the house No. 9 in commemoration of one of the household.

The character at No. 12 is another shaman, armed with a drum, which he holds in one hand and with the other strikes the head with a drumstick, which is seen crossing the surface in the endeavor to drive away one of the evil spirits or demons hovering about in the air after being expelled by exorcism from the body of the sick man.

The group embracing nine figures, No. 13, denotes the assistant shamans driving about and punishing the evil spirits—the same one

being here reproduced with uplifted hands and once as a small being—they being masked and decorated with fringed sleeves and garments and armed with weapons possessing mysterious power in exorcism. The demon appears in nearly each instance to supplicate the shaman not to strike with the uplifted rod, the gesture sign for supplication being accurately portrayed, both hands being elevated toward the one addressed, not only surpassing in pictorial execution the same idea as found among other American aborigines, but being exactly similar to the hieroglyph, for the same idea, of the Egyptians.

Nos. 14, 15, and 16 are sledges, drawn up near to the place of the dance. The representations of the sledges are more nearly like some figures of the baidarka shown elsewhere, because of the almost vertical bow and the dark line along the top, consisting of two horizontal lines within which are short vertical strokes, the latter denoting bales of peltries and furs received from other natives for barter. The man at the fore part of the sledge in No. 14 is smoking a pipe, while the figures on top of both No. 14 and 15 appear to enjoy the scene, their arms apparently raised as if in acclamation. At No. 16 the dog is assisted in pulling the sledge by the man, who is dragging at a cord, the load being evidently a heavy one, as the man at the side of the sledge is also tugging at it to assist in propulsion.

The scene presented in plate 73, fig. 1, is of interest, because the ceremonial dance is performed in the middle of the village, as indicated by the peculiar distribution of the habitations and the sledges of the visitors.

The characters in Nos. 1, 2, and 3 denote permanent or winter habitations, upon which are observed some of the witnesses to the dance. No. 4 is a high pole erected between the habitations, and upon it is an effigy of an animal, while the pole itself is decorated with streamers of calico or cloth, flannel, etc. No. 5 is a slender stick, upon the top of which is placed the wooden effigy of a bird, the whole being designated a "shaman stick" or votive offering, being a token or memorial erected by a relative or friend to one deceased. The memorial is intended also as a "luck stick," i. e., a public testimonial of wishing luck to the spirit of the dead.

Near the habitation No. 2 is an oblong figure upon stilts, denoting a scaffold upon which food is stored. These are so erected as to be beyond the reach of dogs and noxious or predatory animals.

Nos. 6 to 12 are sledges belonging to a party of fur traders who chanced to stop at the village. At Nos. 6 and 12 the dogs have already been unhitched and the owners are seated at the front, smoking their pipes. Bales of goods are indicated by the solid outline of oblong figures raised upon short lines above the sledges themselves.

The human figures represented by Nos. 13 to 22 are the shaman and his assistants. These are duplicate characters of the latter portrayed in driving away evil spirits, Nos. 25 to 26, which are indicated

as human forms, curved, with the feet and legs turned upward and the arms thrown forward, as if making violent efforts at jumping. These spirits are driven around from one point to another, some shamans driving and striking them to compel their departure, while others are assisting in exorcism by using the magic rattles, seen as short T-shaped figures in the hands of some of the assistants.

All of this ceremony is for the purpose of exorcism, the expulsion of the demons of disease from the body of a sick man, indicated as wrapped up at No. 24, where he is supposed to be lying upon the ground.

The entire grouping of the figures is, necessarily, placed along two base lines, each line running parallel with the border of the ivory bow upon which the record is portrayed. The heads of the different individuals, as well as the housetops and the tops of the sledges, are all directed inward toward the middle, this being the limit of possibility of artistic execution in attempting a bird's-eye view of the whole village and its dancing ground—the latter being about the high decorated pole, at No. 4, but for lack of space the ceremonial is transferred to where it is drawn—the intention being to represent the dancers as if in a circle, their movements being directed around the pole bearing the animal figure.

Fig. 141.

SHAMANISTIC CEREMONIAL.

Two distinct styles of engraving occur in the pictograph represented in fig. 141, although they are probably by the same artist. The habitations shown in Nos. 1 and 3 are in delicately engraved lines quite foreign in execution to the crudely carved figures in Nos. 4 to 11. The houses are in profile, and both indicate the place of entrance at the right side, beneath the delicate vertical rod projecting above. Human figures are seen upon the roofs, those upon No. 3 appearing to be occupied in an animated conversation, as suggested by the attitude of the arms.

The vertical poles, connected by a crosspiece, indicated in No. 2, represent a rack where fish and the meat of game are suspended for drying. The figure of a man engaged in some occupation connected with the rack is observed between the vertical poles.

The human figures indicated in Nos. 4 to 9 are engaged in a dance, the attitudes of all but two being well executed in the representation of the peculiar manner of leaning forward the body, common to nearly all aboriginal tribes when participating in such pastimes. In Nos. 6 and 8 are seen peculiar tail-like appendages, representing merely ornamental streamers often tied to the belt at the spiral portion to represent the tails of animals which these natives sometimes imitate, both in dress and actions.

The two mammalian figures at the extreme right—Nos. 10 and 11—are dogs, facing one another, an attitude assumed by strangers, as these had probably accompanied their masters to the place of the ceremony portrayed.

Plate 73, fig. 4 represents a ceremonial dance. The characters in Nos. 1 and 4, representing three pairs of human forms, are dancers, who are aiding the shaman at No. 2, who is shown with his hands uplifted and throwing them circularly about as if "stirring up a breeze," which he is in fact doing, in so far as it pertains to the spirits of the air, whose aid he is invoking. All this is being done because the seated figure at the left end of the habitation, No. 3, is requesting the shaman's assistance. Four other human figures are indicated about the same habitation, though partly worn off, and at the right-hand upper corner is a shaman stick or votive offering, placed there to the memory of one of the owner's family. The stick appears to be surmounted by an effigy of a bird, this being the common practice. Nos. 5 and 6 appear to be dancers, each armed with rattles, small round frames of wood, having both flat sides covered with seal gut or buckskin, being used by shamen or their assistants. No. 7 denotes another habitation, at the left end of which is a votive offering and at the other a human figure, who, with his left hand, reaches down to another, No. 8, who appears in the act of winking aid from spirits in the air.

No. 9 is undetermined, but Nos. 10, 11, and 12 are reindeer, the first and last having attached to them the spirit or guardian of the shaman, who has compelled the animals to come within reach of the hunter's gun, though only one of the three, No. 12, having been secured.

No. 13 represents the shaman in another instance when his services were requested; this time by a native shown in No. 14, at the left-hand end and seated or leaning against the dwelling. Some votive offerings are also perceived upon the roof, while to the right, No. 15, are a number of natives indulging in a dance, probably a ceremonial one, as the record is one pertaining to shamanistic matters entirely.

The ivory bag handle shown on plate 32, fig. 7, is an excellent piece of workmanship, and presents evidence of artistic expression not met with in any other specimens.

The central disk presents the relief carving of a human face, the nose being clearly indicated as different from that drawn or engraved upon the seal's face, while below the mouth are the vertical lines to denote the tattooing practiced by the women. The expression of the face is rather firm and represents a frown. The ring surrounding the face is the fur hood, the fur itself being indicated by the short radiating lines extending therefrom.

The opposite side of the specimen is a reproduction of the obverse, with the exception, however, that the face is that of a man, the mouth being portrayed by having the corners turned upward to denote a smile, while below either corner is a circular spot to indicate the labrets. The furred hood is also shown.

Upon either side of the face are seals, ornamented with rayed circles, while along the lower edge are two parallel lines bearing interior decorations of simple cross lines.

The upper edge has a simple longitudinal crease, while beneath this line is furthermore ornamented by short lateral ones.

INDIVIDUAL SHAMANISM.

The illustration presented in fig. 142 is perhaps unique, the original having been obtained from a native well versed in shamanism, and in fact professed to be one.

Descriptions of shamans' ceremonials in medicine lodges, especially in the initiation of candidates, were published by the present writer in the Seventh Annual Report of the Bureau of Ethnology, and relate to the Ojibwa Mide'wiwin or Grand Medicine Society, a cult society known to the Catholic Fathers who first came to Canada, but which, until the above report was published, had never been thoroughly understood. The complete exposition of the mythology and ritual thereto was given by the present writer; and a similar contribution to science has been recently published in the Fourteenth Annual Report of the same Bureau, and embraces the exposition of the ceremonials of the several cult societies of the Menomini Indians, the report being a part only of the memoir which embraces a complete history of that tribe, first known through their discovery by Nicollet, in 1634.

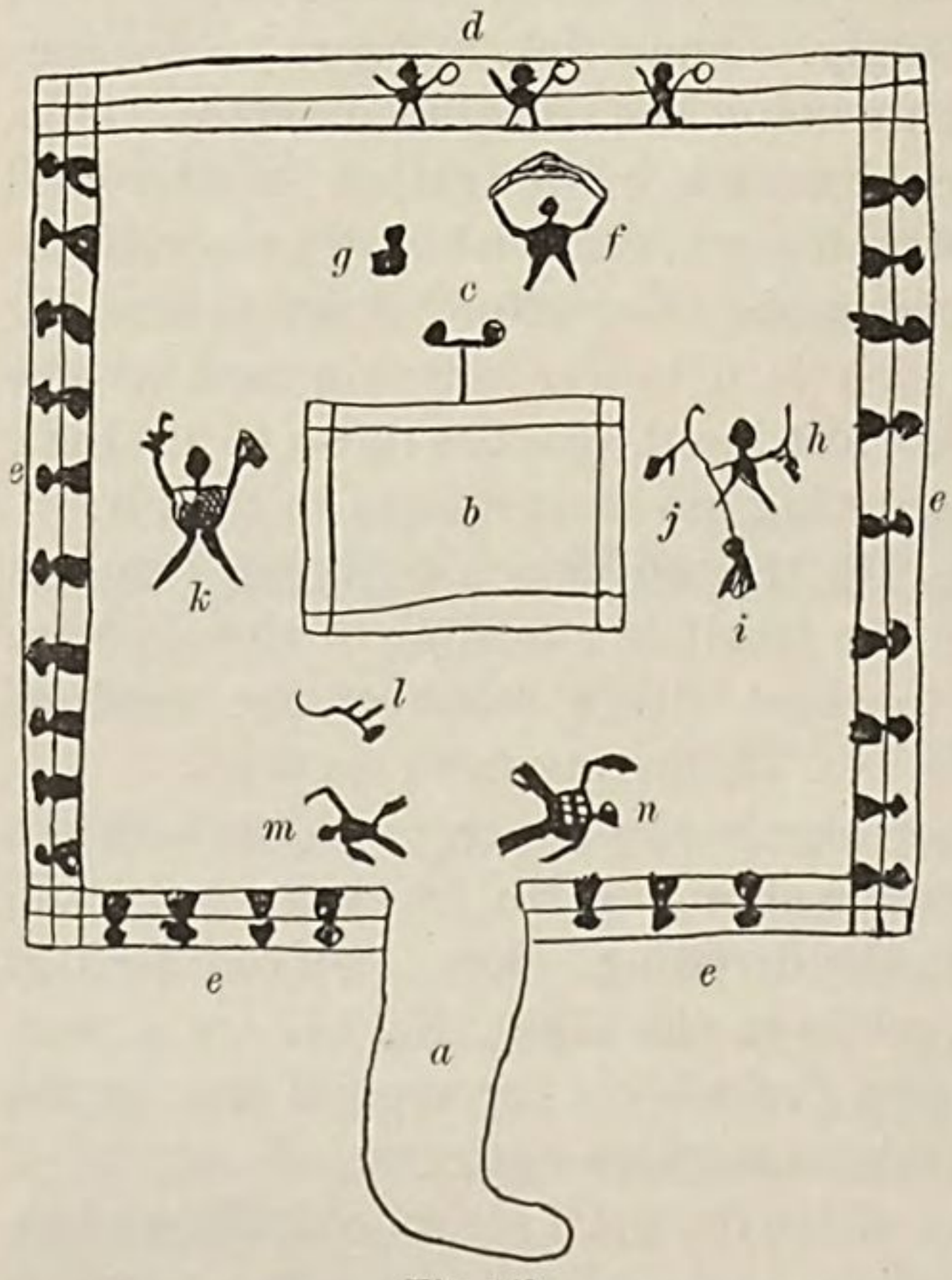


Fig. 142.

SHAMAN CURING A SICK MAN IN THE CEREMONIAL STRUCTURE.

The illustration given above, representing an Eskimo shaman healing a sick man, with the explanation given by the recorder thereof, is of peculiar value and interest. The Innuit ceremonial structures are partly underground, the roof being covered with turf and other materials, and the entrance thereto being by a partly underground or possibly tunnel-like passage-way.

In the figure, *a* represents the entrance to the chamber, or lodge, as a habitation of natives or Indians is often designated; *b*, the fireplace; *c*, a vertical piece of wood upon which is placed a cross piece, upon each end of which is a lamp made of steatite and fed with fat; *d*, the

musicians upon raised seats drumming upon tambourine drums, and producing music to the movements of the shaman during his incantations in exorcising the demon, or evil spirit, supposed to have possession of the patient; *e*, visitors and friends seated around the interior of the chamber to witness the ceremony; *f*, the shaman represented in making his incantations preparatory to exorcising from the body of the patient the demon to whose presence the disease is attributed; *g*, the patient seated upon the floor of the chamber—the legs being folded under his body and scarcely visible to the beholder, they are omitted in the pictograph. *h* represents the shaman in another stage of the ceremonies, driving out the demon. *i* is another figure of the patient—from his head is seen to issue a line connecting it with *j*. *j* is the demon. *k* is the shaman in the act of driving the demon out of the lodge or chamber—in his hands are sacred objects, his personal fetish, in which his power lies; *l*, the flying demon endeavoring to escape through the doorway. *m* and *n* are assistants to the shaman, stationed at the entrance to strike and hasten the departure of the demon.

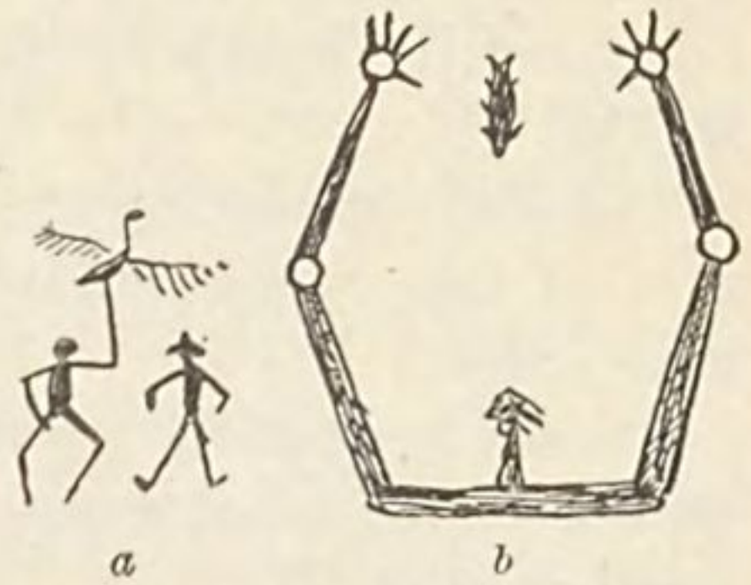
Plate 64, fig. 1, represents a drill bow from the north of Norton Sound. Contrary to the usual custom, this specimen is curved edgewise, so that upon the back appears one continuous record, while upon the front side there are two, the front being beveled from the central line. Quite a number of interesting figures appear upon this record, the results in hunting having apparently been brought about by the kind offices of a shaman, to whom application has been made for success by the recorder or owner. In the small space at the extreme left is the outline of a human figure, the arms bent and the hands touching the sides, two prominent ears, and three lines directed upward from the head. This represents the shaman whose influence had been obtained. Immediately below this human figure is an oblong outline attached to a delicate groove or line extending forward to a whale. This represents the float attached to the harpoon line. The next character represents a seal facing the right, its vis-à-vis being a native crawling along with a spear in his hand, evidently intending to capture it. The short etchings projecting from the base line and extending to the right to a distance of about three inches, represent a marsh. Five seals are shown about the middle of this marsh, as if swimming in the water with only the head and top of the body projecting. Beyond these animals, and at the end of the marsh, is the outline of a boat. Some distance to the right is a figure very much resembling a crouching bear. This again is a reproduction of the figure of the shaman whose kindly offices had been secured upon another occasion. He seems to be throwing forward a magic bullet which, used by the hunter in the kaiak above him, enabled the hunter to secure the seal he wanted, as shown by the bullet mark above the animal a short distance in front of the kaiak. Upon the same face of the bow will be observed a number of characters as if suspended from the upper line thereof. By turning the bow about, the

pictures will be brought into proper position. Beginning at the left, are two elongated figures, each upon stilts, which represent the scaffolds upon which these boats are placed for drying. Three winter habitations are next in order, about which are a number of human beings in various attitudes. Smoke issues from the top of the house, and the vertical rods projecting from the first and second indicate votive offerings. To the right of the third house are three human beings standing about an umiak, which is drawn foreshortened, and a line extending to the right to an oblong figure, which is a seal which they have captured. There are outlines of five natives with arms extended, one with a spear, but the import of these characters is not intelligible. The next figure, however, is shown in the act of dragging a seal, while beyond it is another seal, toward which a native is throwing his spear. Beyond the latter is shown the body of another seal, toward which a hunter is crawling on all fours, and in an opposite direction from him is his companion engaged in like pursuit of another seal, shown to the right. As the bow is shown in the illustration, with the figure of a shaman at the right, it will be observed that along the upper face are a number of illustrations which represent various avocations. At the extreme right is the body of a reindeer lying upon the ground, the horns at the right projecting upward, and upon the body of the animal, as well as behind it, are birds feeding upon it. Following this toward the right are four other animals of like species, with the outlines of a fifth, which can not be clearly determined. Following the base line for some distance, we come to another deer in the act of browsing. A little beyond the middle, toward the right, are three natives, the first going toward the right with his harpoon directed forward, the second with a line extending to the right to some object upon the ground, which the third appears to be stabbing with his spear, the weapon being uplifted. This may represent the killing of a seal. Another native is seen approaching this group of three, beyond which is the outline of a large mammal, evidently intended to represent a deer.

By again turning the bow upside down, so that the upper line becomes the base line, another record presents itself. The group of figures at the extreme left denotes two natives occupied in boiling something, as their hands are attached to short lines extending into the kettles, which are placed against the fire from which the smoke is rising. It is very likely that they are cooking the meat of the reindeer, as the hide of the animal is suspended from the horizontal drying pole or scaffold at the right, beneath which another native is occupied in hanging up the meat. The large, irregularly drawn body to the right of this scaffold appears to denote a habitation. Two human beings are engaged between this and a triangular body which may denote a summer habitation, the latter being usually made of bark, canvas, or boards. To the right of the triangular building is a human being, beside him being another scaffold or drying pole from which is suspended the hide of a

small mammal. Beyond the middle of the bow, toward the right, is a figure of a kaiak with a native within it paddling forward toward a larger umiak under sail. In front of this stands a man with a gun uplifted, as if shooting toward the deer whose feet are attached to the upper line or base line of the preceding record. Beyond this is the outline of another umiak under sail, and occupied by three hunters.

In fig. 143, No. *a*, is represented a native who desired the services of a shaman, and, upon visiting one, declared his needs and probably paid the fee usually required.



a *b*

Fig. 143.

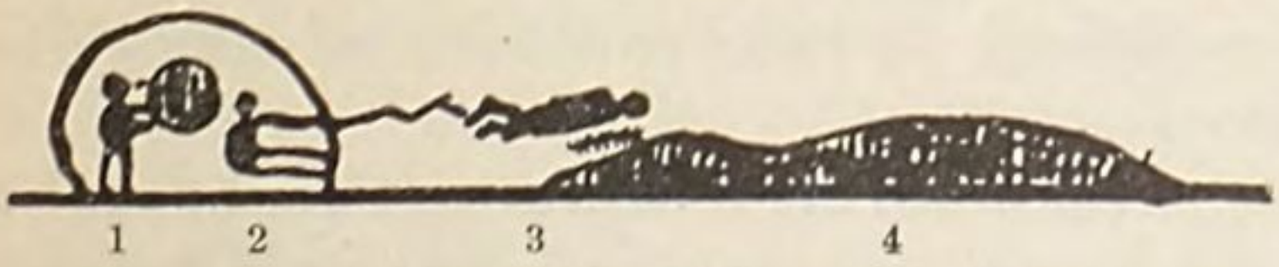
a, SHAMAN MAKING INCANTATIONS; *b*, INVOKING AID.

The shaman, making his usual ceremonies of incantation to invoke his guardian spirit, or tutelary daimon, is shown with that creature about to depart on the mission desired by the shaman.

The spirit is a bird, and, as all flying creatures are deemed lucky, it is here represented in unusually large size, to increase the importance of the performer.

Another illustration of making incantation is shown in fig. 143*b*, the shaman expressing his ability to cause fish to come to the hunter by whom the proper fee is paid. The drawing is taken from an Alaskan shaman's drum, but appears to be foreign to pure Eskimo drawing, having probably originally come from the Thlinkit, or neighboring tribes of Athabaskan stock.

A remarkably interesting engraving is reproduced in fig. 144. The profession of the Eskimo shaman is very like that of his confrère of the Menomini and Ojibwa Indians, of Wisconsin and Minnesota, respectively. He has the power to invoke his personal guardian or tutelary daimon in aiding him to secure the services of other deities or spirits to perform certain acts of exorcism, or incantation and invocation, so that a spirit messenger may be sent on almost any mission for information that may be desired; or the guardian spirit or daimon may bring about some events, or control the actions of both men and animals, as may be desired.



1 2 3 4

Fig. 144.

SHAMANISTIC CEREMONY.

In the illustration, fig. 144, is shown first, at No. 1, an assistant, who aids the performer, No. 2, by using the magic or "medicine drum." No doubt a hunter has called, and for a certain consideration, or promise of some parts of the game secured, has solicited the shaman for "hunting medicine," in order that he may secure a whale.

The two men, the shaman and his assistant, are both within the shaman's lodge, the inclosure or habitation being indicated by the

circular line which surrounds them and is planted upon the ground or base line. The mystic influence has been made to secure a whale, No. 4, which has been compelled by the shaman's alleged supernatural power, in the guise of an anthropoid deity, to swim to the locality where the ceremonies are performed, in order that the hunter may be enabled to reach him. The short serrated marking between the whale's head and the figure of the spirit denotes the spray spouted from the whale.

The line connecting the spirit and the shaman's hand is the indication of the magic influence possessed by the latter over the spirit messenger.

Other illustrations of shamanistic power are given, especially examples of exorcism of demons possessing the sick and to whom illness is attributed.

The illustration in fig. 145 is reproduced from a walrus-ivory drill bow in the museum of the Alaska Commercial Company, of San Francisco, California. The interpretation given to the present writer is as follows:

Two sick men were brought to the shaman for treatment. The shaman's summer habitations are represented in Nos. 1 and 2, the

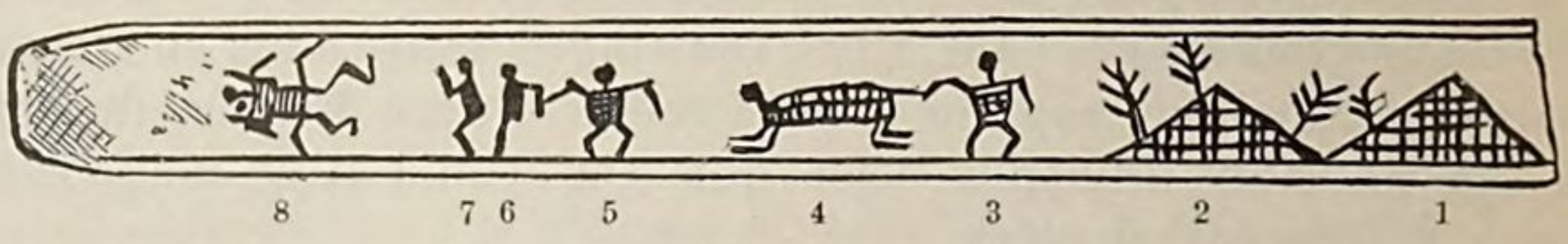


Fig. 145.

SHAMAN EXORCISING DEMON.

presence of trees denoting that there was a grove close by. No. 3 is the shaman, who is represented in the act of holding one of his "demons" or personal deities, with whose aid he pretends to expel malignant spirits or demons from the body of the sick man. No. 4 is the demon under control of the shaman. No. 5 represents the same shaman in the act of exorcising the demon in the patient. Nos. 6 and 7 are the sick men who are under treatment and from whom the "evil beings" have been expelled. The two "evil beings" or demons are shown in No. 8, represented in violent movement in their endeavor to escape the powerful influence of the shaman.

The engraving presented in plate 73, fig. 3, is without doubt one of the cleverest artistic products thus far received from Alaska and known to be the work of a native. The entire grouping of the herd of reindeer, some of the animals walking leisurely along while others stop to browse, and while the foremost manifest curiosity and alarm, indicates that the artist was not only a close observer of the habits of the animal, but had an unusually keen acquaintance with the anatomical structure and the attitudes assumed under different circumstances so as to express the emotions.

The hunters, Nos. 18 and 19, had gone to a shaman to seek his aid in securing luck for game, and the shaman (who is represented by the upper part of the body only, hands outstretched, above the two reindeer, Nos. 11 and 12) being favorably disposed, is driving the game in the way of the hunters, his assistants, at Nos. 1, 2, and 5, also driving animals by being portrayed as if riding upon their backs.

No. 4 represents a fawn, the open mouth suggesting its crying to its parents, while the upper figure at No. 3 and the legless one at the space between Nos. 7 and 8 are represented as beyond the first file of animals—an attempt at perspective, no doubt.

The attitudes of Nos. 12 and 16 are a good attempt at foreshortening, rather a difficult undertaking for a native barbarian.

A doe is also shown above the animal at No. 16, walking parallel with the herd, No. 17, but her legs are supposed to be invisible because of her being beyond those in the foreground.

The herd at No. 17 is portrayed as an elongated body with numerous heads and two legs more than necessary for the eight animals indicated. In nearly all instances the horns are carefully drawn so as to show the peculiar curve toward the front as well as the so-called snow shovels—the horns projecting forward and downward over the nose, and by means of which the animals cut through the snow in search of lichens and other food.

Nos. 18 and 19 are the hunters with bow and arrow, the attitudes assumed in shooting being well represented. No. 20 is the hut.

In the accompanying illustrations, plate 74, are three views selected from a drill bow, in the museum of the Alaska Commercial Company of San Francisco, California. The rod upon which the characters occur is here presented in three sections, A, B, and C. In A is found the beginning of the narrative of one who applied to a shaman for success in hunting; which extends only one-half of the length of the rod. The course of the inscription is then continued on the adjacent side of the rod at the middle, and reading in both directions (sections B and C), toward the two files of approaching animals. Band C occupies the whole of one side.

The following is the explanation of the characters:

A. No. 1 represents a baidarka, or skin boat, resting on poles; this is done in order that the vessel may dry. No. 2 is one of the habitations of the village, as are also those in No. 4, and the storehouses in Nos. 5 and 7. No. 3 denotes a tree located in the village. No. 6 is a tree, between the branches of which and the roofs of the houses are placed poles for drying food—fish, etc. The characters from No. 1 to No. 7 signify the settlement, the home of the person to whom the history relates. No. 8 is the hunter sitting on the ground asking for aid and making the gesture for supplication, asking by elevating both hands toward the sky, or toward the one from whom aid is solicited. No. 9 is the shaman to whom application is made by the hunter desiring

success in the chase. The shaman has finished his incantations, and while still retaining his left arm in the position for that ceremony holds the right toward the hunter, giving him the success requested. No. 10 is the shaman's winter lodge, while Nos. 11 and 13 are trees surrounding it, as well as the summer habitation noted at No. 12.

In the illustration, B is a record pertaining to the hunter's previous application to another shaman with whom no satisfactory arrangement could be made. Consequently, the shaman caused the game to flee and get out of the hunter's way. The detailed description is as follows:

B. No. 14 is a tree standing beside the habitation No. 15, upon which the shaman is observed standing and driving back the game visible over the remainder of the scene. No. 16 is a deer, the nearest to and the first to feel the shaman's order to return to a safe place. No. 17 are the horns of a deer protruding from the surface of the river which the animal is swimming. No. 18 is a fawn, recognizable also by the unusually long legs as compared to the size of the body.

In the last panel, C, is recorded the continuation of the story begun by the recorder or hunter in A, No. 8.

No. 19 represents a tree located near the hunter's habitation, which is shown in No. 20. The hunter, designated in the attitude of shooting, at No. 21, after having been granted the request for success, placed the effigy of his totem upon the top of his house as a mark of gratification and to insure greater luck in his undertaking. Nos. 22 and 23 embrace five deer which were secured, the heads of the animals being turned toward the hunter, denoting that the game was captured. No. 24 is the shaman's demon driving the game toward the hunter, while in Nos. 25, 26, 27, and 28 are indicated other demons who were invoked to aid the chief tutelary guardian of the shaman primarily invoked for this service.

The figure in No. 25 is a water monster resembling, in this instance, a whale, but which is represented by other of the Innuit as a four or six legged serpent. The latter idea is common in the mythology of the Algonkian tribes; but the existence of such a being in the mythology of the Aigalu′χamut and Kiate′χamut, Innuit as well perhaps as among others of this nation, seems entirely original with them.

Plate 64, fig. 2, represents a bone wedge for splitting thin strips of wood for fish traps. The specimen is from Nunivak Island, and is remarkable for the curious engraving which is shown to exist upon the upper surface. It will be observed that the outline within which almost all the small figures are drawn denotes a seal, a median line extending from the eye backward almost to the tail. Above and beneath this are various figures of guns, animals, plants, and straight lines, while upon the reverse, at a point nearly 2 inches from the tail, there projects from the median line a many-branched tree, immediately above which and to either side are shown two reindeer as if browsing. These reindeer present a peculiarity which has been

especially noticeable in Zuñi and Algonkian pictography to represent what is designated as the life line. This consists of a line drawn from the mouth, or very near it, backward into the body, where it terminates in a line, or more generally a triangular figure, to denote the head. It is a shamanistic figure, and indicates that the shaman who possessed it had influence over the life of the animal so portrayed. This subject has been more clearly described in connection with the shamanistic ceremonies of the Ojibwa Indians in the engraving of the Midē′wiwin or Grand Medicine Society of the Ojibwa, published in the Fourteenth Annual Report of the Bureau of Ethnology.

Fig. 146.

VOTIVE OFFERING.

VOTIVE OFFERINGS AND MORTUARY.

Fig. 146 is copied from a piece of walrus ivory in the museum of the Alaska Commercial Company, San Francisco, California, and was interpreted to the present writer in San Francisco in 1882.

The left-hand figure is a votive offering or "shaman stick," commonly designated a medicine stick, erected to the memory of one departed. The "bird" carvings are considered typical of "good spirits," and the above was erected by the remorse-stricken individual who had killed the person shown.

a

b

c

d

The headless body represents the man who was killed. In this respect the Ojibwa manner of portraying a man "killed" or "dead" is similar. Comparison with another Eskimo drawing, designating a "killed whale" by the presence in the back of a harpoon, may be made herewith as another conception of the idea of "dead" or "killed."

The right-hand figure represents the homicide who erected the "grave post" or "shaman stick." The arm is thrust downward toward the earth, to represent the gesture for *kill*. This is common, likewise, to the gesture for the same idea as made by the Blackfeet and Dakota Indians.

Fig. 147.

INSCRIPTION ON GRAVE POST.

In fig. 147 is reproduced an inscription from a grave post commemorating a hunter, as land animals are shown to be his chief pursuit. The following is the explanation of the characters:

No. *a* is the baidarka, or boat, holding two persons. The occupants are shown, as are also the paddles, which project below the horizontal body of the vessel.

No. *b* is a rack for drying skins and fish. A pole is added above it, from which are seen floating streamers of calico or cloth. No. *c* is a fox. No. *d* is a land otter, while No. *e* is the hunter's summer habita-

tions. These are temporary dwellings, and usually constructed at a distance from home. This also indicates the profession of a skin hunter, as the permanent lodges, indicated as winter houses, i. e., with round or dome-like roof, are located near the seashore, and summer houses are only needed when at some distance from home, where a considerable length of time is spent in hunting.

The accompanying illustration, fig. 148, is of a similar nature, and is erected to the memory of a fisherman.

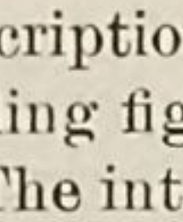


Fig. 148.
INSCRIPTION FROM GRAVE POST.

At *a* is represented the baidarka, containing the owner and a companion, probably denoting the friend of him to whose memory the tablet was erected. No. *b* denotes the bow used in shooting seal and other small marine animals.

No. *c* is a seal, the chief object of pursuit of the deceased, while *d* indicates a whale, an animal also hunted by him.

In the illustration in fig. 149 is a drawing of a village and burial ground, drawn by a native in imitation of the original seen by him among the natives of the southern mainland—the Aigaluxamut. Carvings are generally on walrus ivory, and often on wooden slats. In No. 7 is a representation of the grave post, in position, bearing an inscription similar in general character to those in the last two preceding figures.

The interpretation of the characters is as follows:

Nos. 1, 2, 3, and 4 represent various styles of habitations composing the village. No. 5 is an elevated structure used for storing food. No. 6 is a box with wrappings, containing the corpse of a child. Scaffold burial is frequent among some of the natives. The small lines, with ball attached, are ornamental appendages, consisting of strips of cloth or skin, with charms, or sometimes tassels. No. 7 is the grave post, bearing rude illustrations of the weapons and utensils used by the deceased

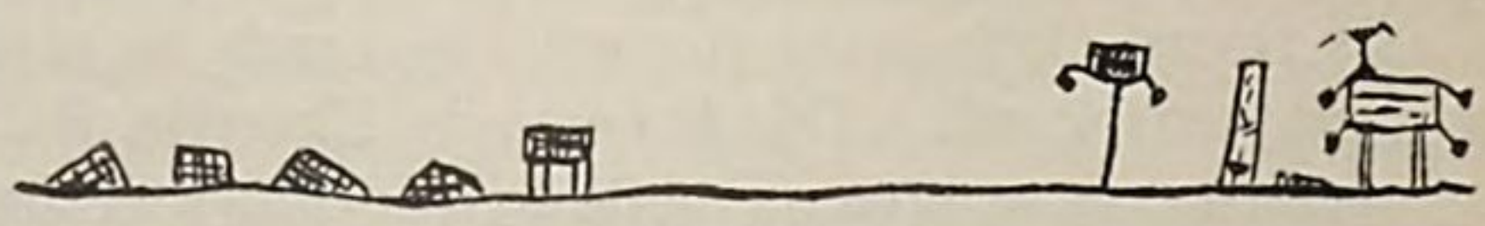


Fig. 149.
VILLAGE AND BURIAL GROUNDS.

during life. No. 8 is a grave scaffold, containing the body of an adult. Besides the ornamental appendages, as in No. 6 preceding, there is a "shaman stick" erected over the box containing the corpse, as a mark of good wishes.

CONVENTIONALIZING.

Some examples of decoration are presented herewith, in which there often appears to be solely an attempt at ornamenting the otherwise plain surface of ivory. In others there are evidences of an advance in the graphic representation of objects, in that the originals are no

longer accurately or entirely portrayed, as through an apparent process of synecdoche conventions are attained, which are thus employed for ornamentation, while the original import of the objects themselves seems to have been lost sight of, in so far as their use for historic records are intended. Some miscellaneous examples will suffice to illustrate these remarks.[1]

Plate 40, Figs. 5, 6, and 7 are interesting examples of conventionalizing, and indicate a long stride toward the employment of certain forms for decorative purposes or for the ornamentation of spaces upon ivory rods or bows that might not otherwise be apt to be filled with records of exploits or ceremonials.

The row of thirteen figures in plate 40, fig. 5, are the rear portions of whales, the attitude sometimes taken by them in plunging, when the tail emerges from the water to an unusual distance.

The row of fourteen T-shaped characters, fig. 6, are conventionalized forms to denote the whale, the tail only being drawn to indicate the entire animal. Similar figures are frequently tattooed upon the body to denote a successful whaler. Instances are referred to under the caption Tattooing, p. 781. In the row marked fig. 7 are shown fifteen swimming seals, the arrangement being decorative, though, in accordance

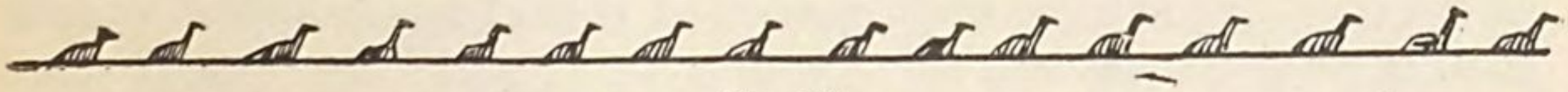


Fig. 150.

FIGURES OF SWIMMING SEALS.

with a common custom, they may also have been intended to denote many seals captured, an indefinite number of objects often signifying many, and more than the actual number indicated, which may be limited for want of room.

Other instances of conventional characters of well-known objects are presented elsewhere.

The regularity with which the seals are portrayed in fig. 150 is another illustration of recording the successful hunt for these animals, as well as an attempt at utilizing these figures for decorative purposes.

Other illustrations are given herewith, in which certain animal forms have become so conventionalized as to be almost unrecognizable, and in this shape these forms are used secondarily, and perhaps even primarily, as decorations, the designs being artistic, as well as of historic interest.

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[1]Since this paper was prepared for publication there has been issued by Mr. Hjalmar Stolpe, of Stockholm, an elegant folio publication on ornamentation, entitled "Studier i Amerikansk Ornamentik E Bidrag til ornamentens biologi," pp. 42, figures 137, plates XX.

Eskimo workmanship bearing decorations occur on figures on pages 10–21. A boat paddle, fig. 45, showing both sides, bears a painted face on one surface and a conventionalized form upon the reverse. This specimen is from Port Clarence, and from the fact of its being in color and on wood, is of interest.

Tattooing, showing various conventionalized forms, occur in figure 47 ["Central Eskimo,"] and figure 48 ["from St. Lawrence Island"].

Plate 22, fig. 4, represents a drill bow from Point Barrow. There are two horizontal median lines, three-sixteenths of an inch apart, extending from end to end, from which extend toward the outer sides short, straight incisions, opposite to each of which are the conventional whale tails. This appears to be strictly decorative, the original import as a hunting record having apparently been lost sight of in the attempt at ornamentation.

Plate 22, fig. 3, represents another specimen of like character from the same locality as the preceding. It measures 16 inches in length along the dorsum. Apart from the two perforations which exist at either end of the bow, there are larger holes made for the insertion of turquoise or blue glass beads. On the under surface are represented skins of a number of animals. The ten narrow hides at the left are otter skins. The succeeding five oblong figures with interior cross hatchings are probably bear hides. The remaining figures to the right, ten in number, represent the skins of the deer. A very decided attempt is shown in this illustration at ornamental decoration as well as preserving a hunting record, as the figures are intended to be represented as nearly alike as possible, the skin of each species of animal being almost exactly like others of its species.

Fig. 151.

HABITATION.

One of the drill bows bears a series of illustrations of habitations, various forms being indicated, so as to readily connect the extremes. The normal form is shown in fig. 151, while the more conventionalized outline, which would, if alone, be difficult of specific identification, is shown in fig. 152.

Plate 40, fig. 7, represents a series of seals, the object of which is rather in the order of a decoration than as a hunting record. The carving is deep, and characteristic of the work of the natives from whom it was obtained at Cape Nome. A like form of representing seals is shown elsewhere.

Fig. 152.

HABITATION.

The various panels in plate 60, fig. 2, contain seals at either end, as Nos. 1 and 11, while the bars of vertical lines separate the intervening portion of the ivory rod into other panels, containing single figures of trees, in regular order and rather conventional, and in this state resulting, in reality, in merely a subject of no history, but of decorative or ornamental import.

At No. 11 a new record was begun; a man is seated, and is apparently preparing some article of diet.

Plate 63, fig 4, represents a drill bow from Kotzebue Sound. The specimen measures 18½ inches in length, and is decorated upon the side shown in the illustration by two rows of seals equidistant from one another and so arranged as to represent a method of ornamentation rather than a historical record. The great number of seals may

indicate, as in other records, that the hunter was a very successful seal hunter. Upon the opposite or convex side is a similar portrayal of animal forms, though in this instance only one continuous row of spouting whales occupies the base line, while along the upper line but four of these animals have been drawn, the remaining eight spaces being blank. One edge of this bow is very crudely but deeply incised with strange looking figures representing human beings with alligator heads, armed with mandibles similar to those of huge birds. Several mammalian forms are also represented, one or two being of mythic import. Several kaiaks are also shown, the occupants being engaged in walrus and seal hunting.

Plate 21, fig. 1, is the back of the bow drill represented in plate 3, fig. 1. Considerable interest is attached to this specimen from the fact of the pronounced median lines extending from end to end, the various objects between these and the outer margin being so arranged as to form a very symmetrical and decorative figure. This approaches very nearly one variety of decoration practiced by the Papuans, and referred to by Mr. Alfred C. Haddon.[1]

The specimen is inverted and the interpretation begins at the first figure at the right, which represents a man in a kaiak following four seals. The two figures extending above and below the median line are bear skins. The two elongated figures at the narrow portion of the bow are otter skins. These are succeeded at the next widening of the bow by the representation of another bear skin, and so on alternately to the extreme right, in addition to the last otter skins there being still two added because of the narrowness of that portion of the bow. The space beyond the perforation in the bow at the extreme right is ornamented also.

Plate 24, figs. 5 and 6, represents two ivory bodkins, both from Norton Sound, where they were obtained from Mr. E. W. Nelson. They are each about $10\frac{1}{2}$ inches in length. The specimen shown in fig. 5 is sharply pointed at either end and has three decorated sides. On the plate the illustration is inverted so that the triangles with projecting lines which represent summer habitations are misleading. In this instance the figure of the summer habitation has been adopted as a means of decoration only and has no special import. Upon the next side, the edge of which is partly visible, are the figures of eight walruses, also placed upon the utensil simply as a means of decoration. Upon each of the three sides appears a deeply creased base line, and at intervals of about one inch are oblique lines one-eighth of an inch in length placed almost together, closely resembling one of the forms utilized to denote or indicate the "Finback" whale. The signification of these characters, however, can not be determined. They are believed to represent decorative marks only.

Plate 24, fig. 6, represents a bodkin, only one end of which is sharp-

[1] Evolution in Art, before quoted.

ened, the other end terminating in a seal head. The four sides of the specimen are decorated, the first, shown in the illustration, bearing six figures composed of the rear halves of whales joined together so as to present flukes symmetrically at either end. On the second side are outlines of seven triangular summer habitations, on the right-hand slope of which are two projecting lines, similar almost to the lines in the preceding figure representing summer habitations. On the third side are engraved figures of seven wolves, while upon the fourth side is a single horizontal line with other oblique lines extending therefrom at intervals of about an inch, similar to the groups of threes in the preceding figure.

Plate 21, fig. 5, represents a drill bow from Kotzebue Sound, measuring $17\frac{3}{8}$ inches in length. It is made of yellowish and old looking ivory, the dorsum being round while the under surface has two divided faces. The animals represented upon these are wolves, and are evidently arranged in such manner as to present a pictorial result rather than a hunting record. It is possible that the hunter may have been a wolf hunter and intended in this manner to illustrate his great success, as a great number frequently indicates an indefinite number—that is, a larger number gathered during a lifetime than could conveniently be

FIG. 153.

CONVENTIONAL BEARSKINS.

portrayed on so small a surface. A similar idea obtains in gesture language, in which the native will pass his hands upward and outward as if outlining a heap of some soft material, this gesture signifying large or many; an indefinite number signifying a great many, in contradistinction to a limited number which would be indicated by gestures of an entirely different form.

The specimen shown in plate 37, fig. 6, is part of a drill bow which is nearly 25 inches in length. Upon one surface the utensil is decorated with figures of seventeen reindeer and nine bear skins, rather decorative than as a hunting record, while upon that side visible in the illustration thirty-seven skins of the seal are drawn, the interior of these objects being decorated with short lines extending from the outer line inward toward the middle of the body, while the median line extending through the middle of the hide is similarly etched toward the outer side, leaving the two white spaces as a series of zigzags.

Plate 59, fig. 1, represents a drill bow from Nubriakh, collected by Mr. E. W. Nelson. The characters represent bearskins, and are placed almost at equal distances from one another across the entire length of the specimen, to represent ornamentation rather than a record of exploits.

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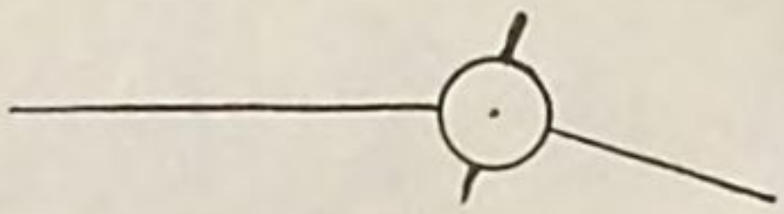

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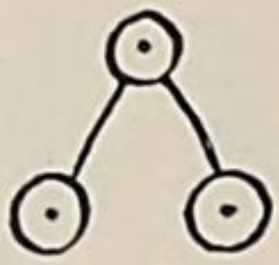

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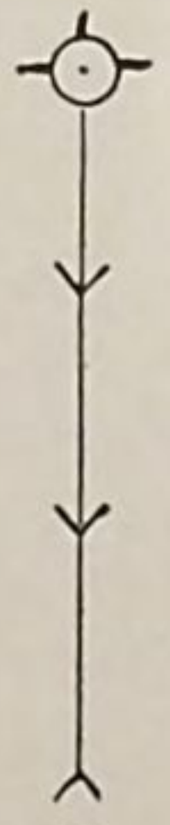

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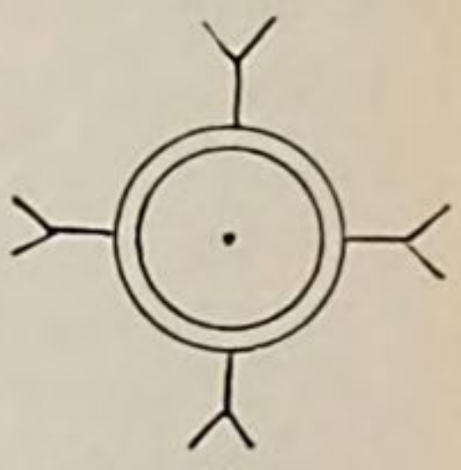


15

VARIOUS FORMS OF CONCENTRIC CIRCLES.

From Eskimo specimens.

EXPLANATION OF PLATE 77.

Fig. 1. Simple uncleated circle, found exceedingly common on ivory utensils and ornaments.

Figs. 2, 3, 4, 7, and 10. Represent various forms of concentric circles, usual as ornamental or decorative. Some of these are drawn to denote nests of Kantags or buckets.

Fig. 5. Not common, but evidently made with auger bit.

Figs. 6, 8, 12, and 13. These occur on various animal effigies, and are made to denote the eyes.

Fig. 9. This is a variant, and occurs on a Thlinket specimen, apparently in imitation of Eskimo patterns.

Fig. 11. Cranberry stalk and blossom.

Figs. 14 and 15. Variants of flower of the cranberry.

The nine crude outlines shown in fig. 153 represent that number of bears killed during the lifetime of the owner of the record.

The skins are here suspended from upright poles or posts, and the arrangement of figures has, in other instances, suggested patterns for decorative purposes, as will be observed elsewhere in connection with the subject pertaining thereto.

Figs. 7 and 8 of plate 50 are spear guards usually attached to the upper surface of the canoe so as to form a secure guard upon which the spear is placed. Both of these guards are decorated with concentric rings, both different. Upon the outer line in fig. 7 we perceive diverging short lines terminating in the conventional V-shape or tree figure, while in the other, fig. 8, will be perceived the plain line, which may perhaps refer to the flower symbol noted in fig. 4 of plate 50, and described elsewhere in Mr. Turner's communication. See also plate 75 bearing various forms of native patterns of circles.

Plate 38 represents four ivory bag handles, of which fig. 1 is from Norton Sound. It bears upon the upper side four sets of concentric circles, equidistant from one another, and connected by a median line, above and below which are a pair of radiating diagonal lines apparently denoting the conventional symbol of whale fins. This specimen is similarly marked upon the bottom side and convex edge. With reference to this ornamentation, it is one step beyond that represented in plate 29, fig. 2, which was obtained at St. Michaels, and upon one side of which are shown five sets of concentric circles similarly connected by median lines, but without the lateral radiating lines above noticed.

On plate 38, fig. 3, is shown another bag handle upon which appear seven sets of concentric circles, which, however, are smaller than those shown on the two preceding specimens, plate 38, figs. 1, 2. The design shown in fig. 3 appears to be the primary mode of decoration, as in this there are no connecting lines.

Plate 48 represents a variety of ear pendants from several localities on the west coast of Alaska. The chief feature of these specimens consists in the variety of ornamentation. Simple dots made by drilling, concentric rings, nucleated circles, and in one specimen—fig. 8—a series of serrations attached to two of the circles, comprise the chief features of ornamentation. Fig. 9, however, represents a powder charger consisting of a bell-shaped implement, hollow beneath, with just sufficient cavity to contain one charge of powder. The nucleated circles upon this specimen are among the smallest thus far found in the collections of the National Museum. The arrangement of the circles, also, is artistic and geometrical. Those attached to lines extending from the ring, and apparently suspended therefrom, are, without doubt, flower symbols, as midway between the circle and the upper ring are short lines denoting leaves. This is probably the blossom or fruit of the *cranberry—Vaccinium Vitis-idæa.*

Around the lower border of the utensil is a delicately incised line,

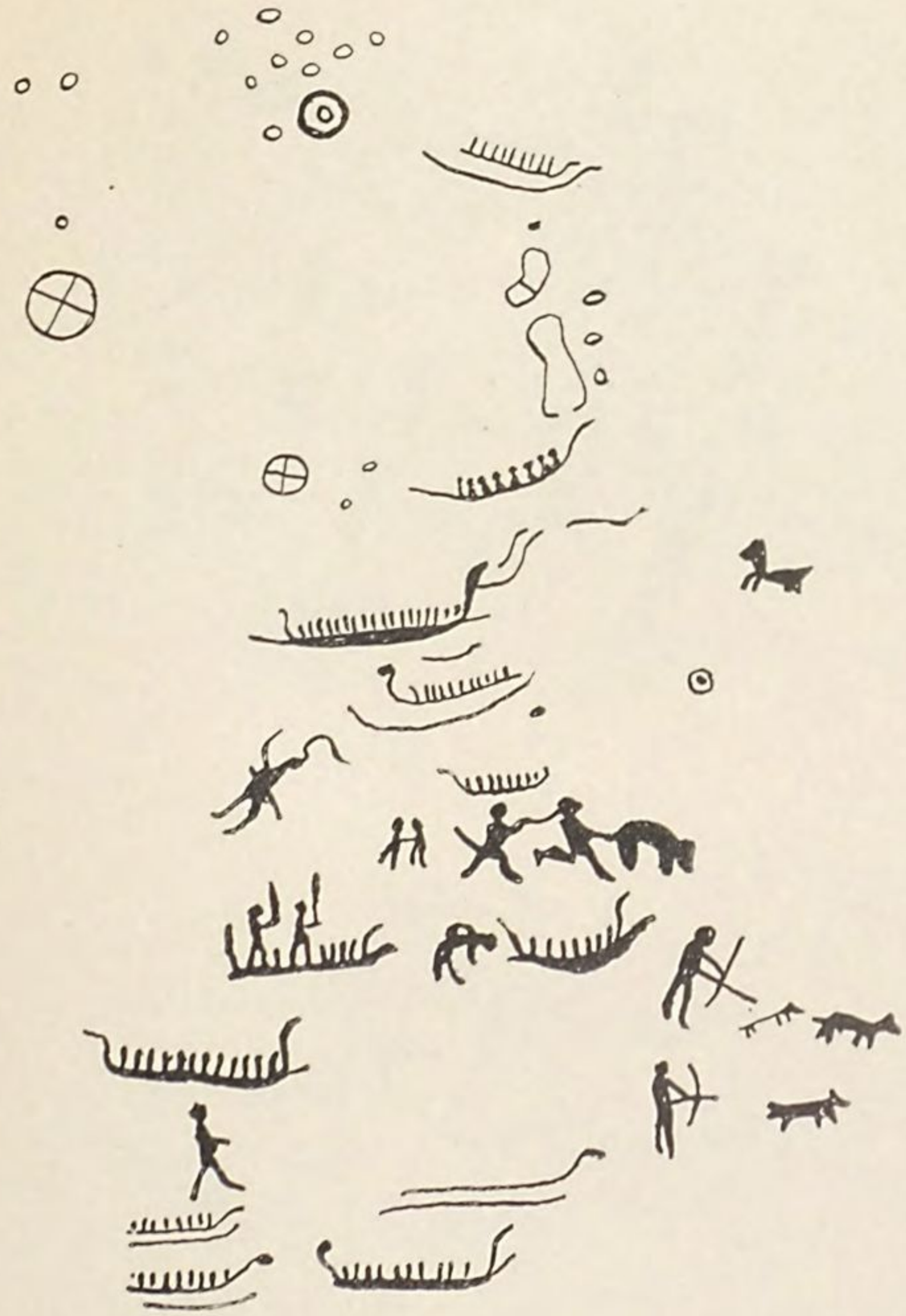
small nucleated circles alternating with vertical lines terminating above in a similar small nucleated circle, from which diverge two short lines, which in turn end in similar rings. The entire outline of the character is that of the simpler form of the tree symbol, though it is believed to denote the fruit of the arctic plant known as the *Vaccinium*. This belief is strengthened by the occurrence of similar characters known to denote this plant, and from which a native carrying a bucket or kantag is shown as in the act of plucking fruit. Compare fig. 70, p. 863.

Above these characters are a series of larger nucleated rings, each with three radiating lines, which are without doubt intended to represent the flowers of this same plant. That the circle with such external ornamental appendages is intended to represent flowers has been explained in Mr. Turner's communication above noted.

The circles portrayed upon this specimen are the most delicate found upon any of the specimens in the National Museum. They are apparently the work of an expert workman, and made with comparatively delicate instruments.

The arrangement of nucleated rings in the form of a triangle and connected by short lines, as in the fruit or plant character above noted, appears upon some Thlinkit bone ornaments shown in plate 9, fig. 3. The transmission of the character, or its suggestion, appears to have come from the Innuit, the southern tribes being known to make this pattern, and the intertribal relations with their eastern and southern neighbors is constant. Being a shaman's ornament among the Thlinkit would suggest the idea that the original signification of the character was unknown to them.

Plate 68, fig. 6, represents a very beautiful rod of ivory from Kotzebue Sound. It is perforated at one end like a bag handle, but sharpened at the other in imitation of a bodkin. Three sides are decorated. The peculiarity of the ornamentation is the insertion in the blank spaces of nucleated rings, their association with these hunting expeditions being very much in imitation of the characters upon the petroglyphs at Bohuslän, in Sweden, and shown in plates 75, 76, and others of like character, showing simple nuclei or pits, as well as nucleated circles attached to lines to represent human beings, exactly like some found in the Shoshonean area of southern Nevada and in the Moki country. The illustration in plate 75 represents at the extreme left four vertical lines, with the zigzag and toothed pattern found upon other objects, which has been designated as the fish trap or seal tooth pattern. The next figure, a crescent, and is a symbolical whale tail. The two bars leaning toward one another, between the whale tail and the walrus, are the rude outlines of the sides of a habitation, the delicate indication of the occupants within being shown. The remaining figures, as will be observed, consist of a kaiak and several whales and walruses. The groups upon the other sides of this rod are very much in imitation of the preceding.

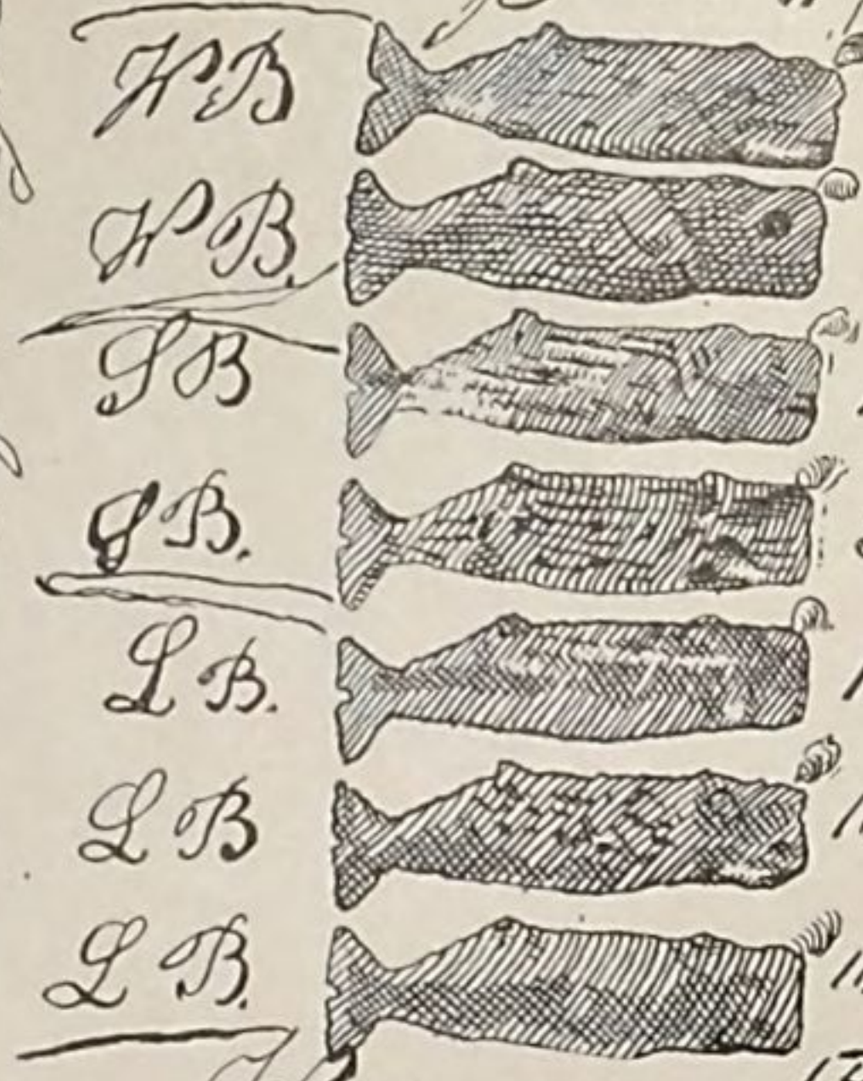


PETROGLYPHS AT BOHUSLÄN, SWEDEN.

PETROGLYPHS AT BOHUSLÄN, SWEDEN.

1853. Bark Peri Cruising

12 Tuesday Decr 11th M Commences with fresh breezes



16 Bbls
16 Bbls
16 Bbls
50 Bbls
16 Bbls
16 Bbs and
16 Bbls

from S.W.b Squally & Rainy
heading S.b.E Middle part heavy
Rain, Latter part & All Saw
a School of Sperm Whales
Lowered all three boats. Struck
and saved 7 Whales. got
them alongside at 1 P.M
commenced Cutting
Latt 4 21 N Long. 60 W

Wednesday Decr 12th M Employed Cutting and
Boiling Light breezes, and good
Weather.
Latt. 4.15 N Long

Thursday Decr 13th M. Fresh breezes from S.E. Employed
P. M.

PAGE FROM WHALEMAN'S LOG BOOK.

PLATE 78.

Other interesting and similar illustrations of nucleated rings, in connection with lines to denote human beings, are given by Hans Hildebrand,[1] as also concentric circles and simple nuclei in the same work, page 381. These illustrations are of petroglyphs, and it is evident that in the first named instance the nucleated ring is the head of an oarsman, or perhaps one in authority, as most of the designations for the rowers are alike in length and form, whereas the nucleated figures are always nearer one end of the vessel.

Plate 31, fig. 3, bears upon one side a median incision, upon the upper sides of which are represented a series of conventionalized trees. Upon the reverse are similar tree patterns, but drawn at oblique angles, all leaning toward the left.

In the figure of a ship's anchor chain the links are indicated by drawing the chain zigzag. This is found to occur in only one instance, as shown on plate 40, fig. 2.

Other interesting examples of conventionalizing are shown in the distinction between the portrayal of an ice floe, being a simple curved line as in No. 5 of fig. 112, to denote transparency of substance, while the walrus upon it is incised and the surface blackened.

A similar view of walrus upon rocks is shown in fig. 3 on plate 70, the rocks being outlined somewhat after the order of a floe, though, to show the solid and creased sides of the dark material, the pictograph is incised with the zigzag-like pattern, frequently illustrated in ornamental borders as the fish-trap pattern.

Plate 38, fig. 4, shows a bag handle from Point Hope. The outer edges are scalloped, a small circular excision appearing at the points where these scallops should terminate, each of these excisions being furthermore ornamented by a circular line which surrounds it and from which radiate shorter lines at right angles like the rays of the sun. In the middle of the handle, extending from end to end, is a high, rounded ridge, at each side of which is a median line; on the sides facing the circular excisions are two short lines directed outward, while midway between these points are two shorter lines directed inward toward one another.

Plate 78 represents part of a page from a whaleman's log book, being a journal of the bark *Peri*, Captain E. Russell, who sailed Friday, June 29, 1854, from New Bedford, Mass., for the Indian Ocean, on a sperm-whaling voyage, and returned May 26, 1857. As will be observed by reference to the illustrations, the note under date of Tuesday, December 11, 1855, is as follows:

> Commences with fresh breezes from NW. Squally & Rainy heading SW. Middle part heavy Rain. Latter part 7 A M Saw a school of Sperm Whales. Lowered all three boats. Struck and saved 7 Whales, got them alongside at 1 P M and commenced cutting Latt 4″ 21 N Long. 60″ W

Near the left margin is a vertical column of six whales. At the

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[1] "De Lägre Naturfolkens Konst," Stockholm, 1884, pp. 379, 380.

extreme left is an inscription, "16th time of seeing them," denoting that it was the sixteenth time that whales had been sighted. The letters at the tail end of the whales, W B, S B, and L B, denote waist boat, starboard boat, and larboard boat, two whales being captured by the first and second, while three were taken by the last named. At the right of the whales are the numbers of barrels of oil furnished by each, as well as the total, amounting to 146. The method of stamping these outlines is by means of small wooden blocks, which are dipped in ink or other coloring matter, for the reason that the picture of the whale is so readily perceived, obviating the necessity of searching over each page to find any special reference thereto in the manuscript text.

On plate 79 is represented another part of the same log book, and under date of Monday, July 21, 1856, are two references, the first, "29 time of seeing," and another "30th time," referring to the characters of whale's flukes or tails standing upright, and denoting in this connection that the whales were sighted but not captured.

On plate 80 are represented five specimens of Eskimo carvings which are of interest in this connection.

In fig. 1 is shown a very short kantag, or perhaps bag handle, from Sledge Island, the original measuring but about 2½ inches in length, while the perforations along the top ridge separate the pieces of ivory into a series of connected flukes. These are better illustrated on fig. 3, a specimen from Cape Darby, in which the whale tails are almost separated from one another, slightly bent to one side, and very natural in general outline.

In fig. 4 is shown another neat specimen from Sledge Island, while in fig. 2 we have one made of a piece of hollow ivory or bone, in which both ridges are rudely perforated so as to simulate whale tails, as in the preceding illustrations. These four specimens are of interest, from the fact that the flukes are utilized in the decoration or ornamentation of utensils, and probably at the same time denoting that the owner was a whale hunter or had been successful in catching whales. The most interesting specimen in the series, however, is that given in fig. 5, which represents a kantag handle from Point Hope. This specimen, in addition to having the carving of a whale fluke at the upper edge, has neatly engraved upon one side four flukes, flanked on either side by a bowhead whale facing inward. The six figures are arranged artistically and symmetrically, and are almost exactly of the same class of ornamentation as in plate 80.

The question would naturally arise whether the Eskimo had copied such methods of portrayal from the whalers, or the whalers from the Eskimo, or whether the art evolved independently among both.

In consultation with Captain E. P. Herendeen, now of Washington, District of Columbia, a gentleman who has spent many years in the Arctic regions, I am informed by him that he made his first whaling voyage toward Point Barrow in the year 1854. At that time he found

1856. Bark Peri.

Sunday July 20 Comm
from
Middle
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-
-

Monday July 21st Comm
from D.
At 2 P.M.
going
all Thro
hard to
get no
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boats
near
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29 time
of sleeing

30th time

WHALER'S RECORD OF SIGHTING WHALES.

EXPLANATION OF PLATE 80.

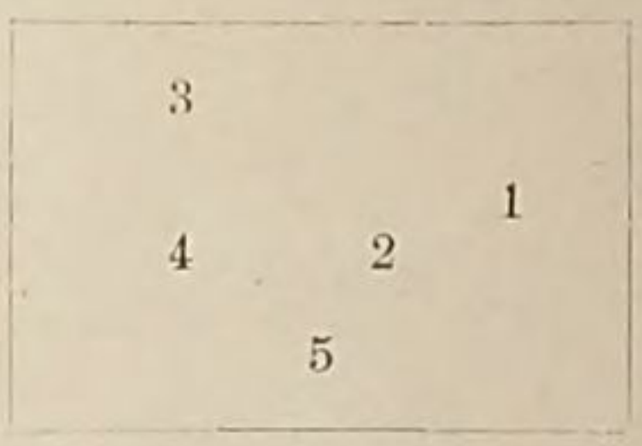


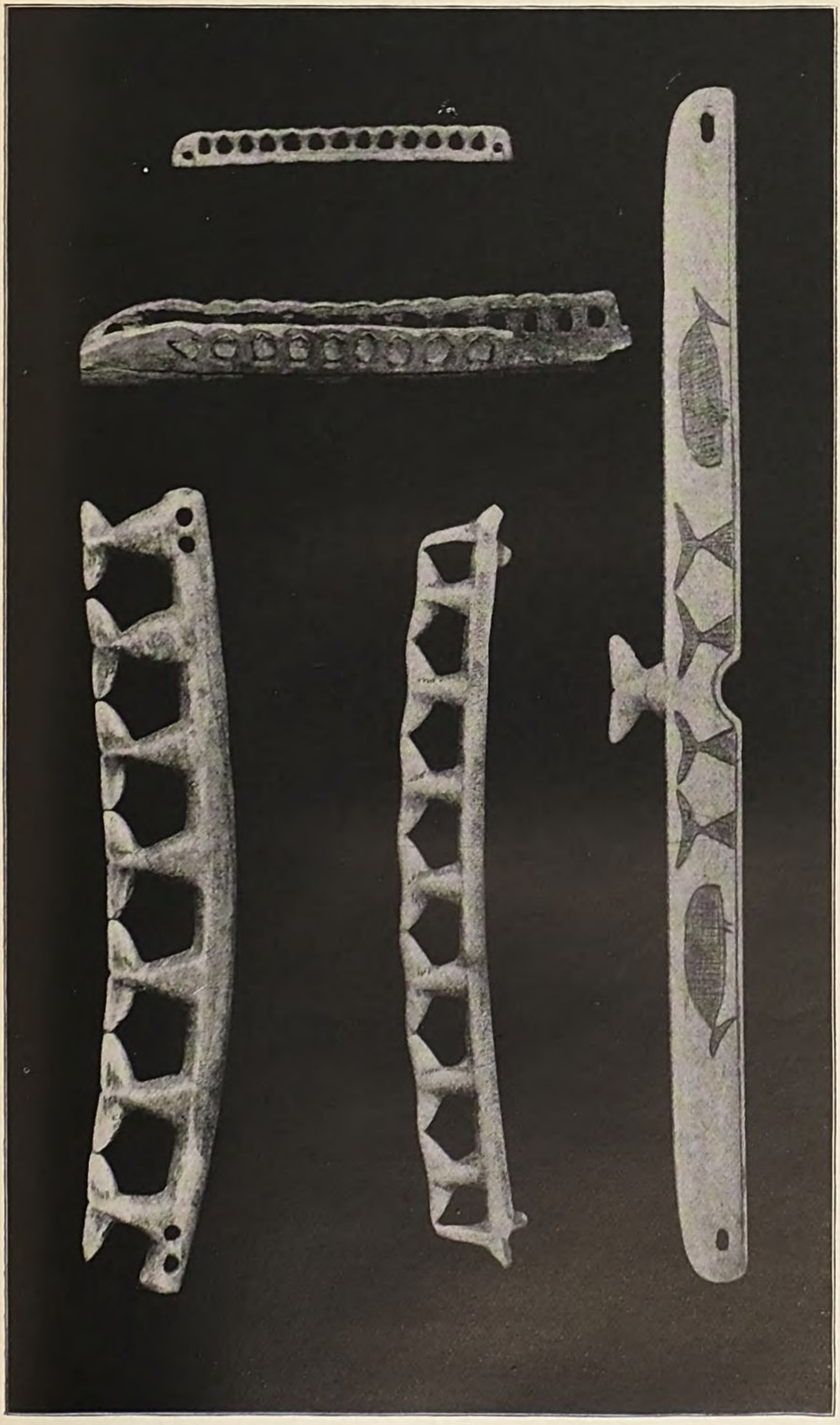
Fig. 1. KANTAG HANDLE.
(Cat. No. 45154, U. S. N. M. Sledge Island. Collected by E. W. Nelson.)

Fig. 2. KANTAG HANDLE.
(Cat. No. 43434, U. S. N. M. St. Michaels. Collected by E. W. Nelson.)

Fig. 3. KANTAG HANDLE.
(Cat. No. 48137, U. S. N. M. Cape Darby. Collected by E. W. Nelson.)

Fig. 4. KANTAG HANDLE.
(Cat. No. 44717, U. S. N. M. Sledge Island. Collected by E. W. Nelson.)

Fig. 5. KANTAG HANDLE.
(Cat. No. 63801, U. S. N. M. Point Hope. Collected by E. W. Nelson.)



ESKIMO CARVINGS OF WHALE TAILS.

in possession of the natives of Point Barrow innumerable specimens of ivory upon which were engraved similar outlines of flukes and whales, both of which had reference to whaling expeditions. Captain Herendeen believes also that the Innuit practiced this method of indicating a whale, by simply portraying its tail, prior to the voyages to that part of the Arctic ocean of the whalers. This is a question that can not now be satisfactorily determined when we come to remember the early arrival in that part of the Arctic regions of the Russians and people of other nationalties, all of whom came for purposes of exploration and probably traffic. The practice of portraying but part of an animal for the whole, known as synecdoche, is very common among some of our native Indian tribes, and it seems to have resulted chiefly, perhaps, as labor saving, and also perhaps because many of the natives may have had occasion to portray certain animals by only the most conspicuous parts to represent the whole, as the observer would readily understand the intention of the artist. Such a process of pictography is particularly prevalent among the Dakota and other of the Plains Indians, especially in connection with the indication of proper names, in which the human head is drawn with a short line, issuing from the mouth and running upward from the head, connecting thereby the object or animal which suggests the name of the person; and in which the line denotes speech, in imitation of the common gesture sign made by passing the finger forward from the mouth, denoting "That is it," instead of simply passing the finger forward to denote speech generically; the latter would be indicated in pictographs only by a short straight line, extending forward and perhaps slightly curved, but not attached to any object.

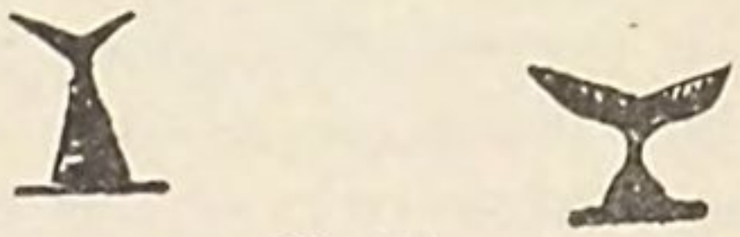


Fig. 154.

WHALE FLUKES, CAPE NOME.

In comparison with the preceding remarks concerning the conventional fluke, the accompanying designs on fig. 154 are reproduced from a specimen from Cape Nome. The forms are diverse, yet both are accurate in suggesting the original which furnished the concept.

Such T-shaped figures, denoting flukes, are tattooed upon the body to signify that the person so decorated is a successful whaler. Reference to several localities where the natives practice this method of personal adornment, to indicate also individual achievement, will be found under the caption of Tattooing, p. 781.

Plate 14, fig. 3, represents a kantag or bucket handle from Norton Sound. Upon this specimen is engraved a wolf, to the right of which are two grazing reindeer, while the fourth and fifth characters represent hides or skins of bear placed in an upright position so as to almost resemble the tree symbol. To the right of this is a habitation with smoke rising from the smoke hole, and a native approaching the entrance. Along the upper margin of this specimen are two seals at the left, and a whale's fluke, indicating that a whale was seen by the

natives in the boat to the right. This portrayal of the whale's fluke, although utilized as a simple ornament or decorative design in many instances, is here portrayed in imitation of the system adopted by the New England whalers, as represented in plate 80.

Plate 68, fig. 1, is a drill bow from Cape Nome, 15½ inches in length and ⅝ of an inch square. Upon the side shown in the illustration are a series of semicircles, with tooth-like attachments on the upper surface, the interior being filled in with vertical lines. Between each of these semicircles is a cross-like figure denoting a bird. The semicircles themselves are conventional characters to represent whales.

At the extreme right is the outline of a reindeer facing toward a native, who has his arms in the attitude as if holding a bow, part of the character being obliterated. Upon the opposite side of this bow are a number of curious looking objects somewhat resembling the general outline of a whale with a peculiar mandible-like attachment extending upward and forward from the head, while to the back are attached short, inclined lines almost resembling harpoons. The fact that these short lines are placed in position by pairs indicates that they denote legs, the mandible being in reality the mouth of the mythic creature which it represents lying upon its back with the feet uppermost. At the extreme right of this record are three small creatures of the same species, though not as carefully represented as the preceding ones.

Upon the top of the bow the left and middle portion is occupied by reindeer, and a habitation, near to which is a meat rack and human figures with arms outstretched. At the right of the record is a very delicately engraved picture of a village with six habitations.

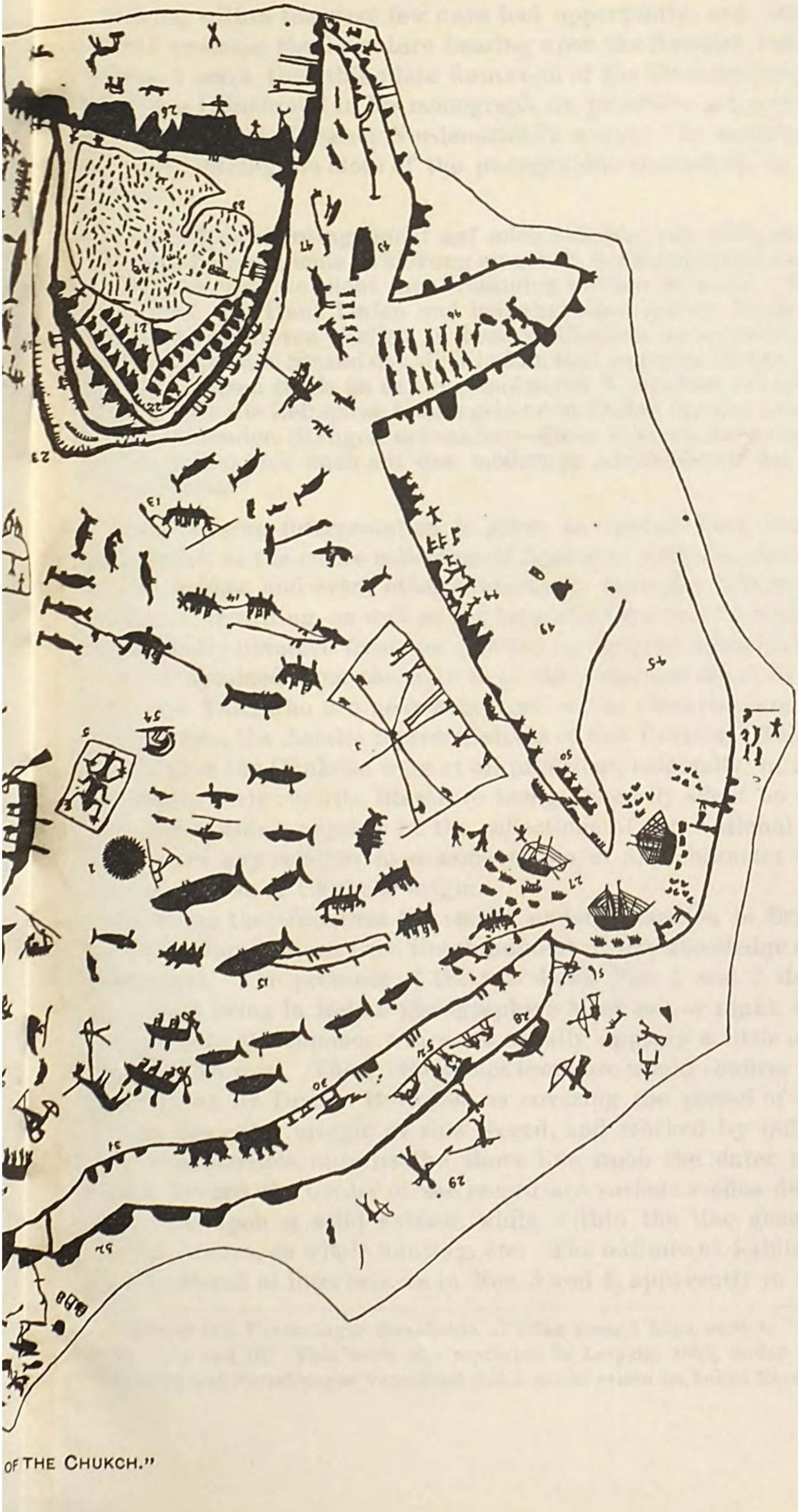
The bottom of the bow is ornamented by a continuous line of nucleated rings of several sizes, the central perforations in nearly every instance being unusually deep, while the rings themselves surrounding the perforations are generally deeper on one side as if the instrument with which they were made had not been held directly at right angles with the surface operated upon.

COMPARISON.

Plate 81 represents a "History of a Year of the Chukch." It is reproduced from a lithographic print by Doctor Carlos Bovallius, and is in imitation of the original, drawn on walrus skin, and it is alleged to have been the work of some Chukche natives. It is not known whether Doctor Bovallius has published a history in detail of this pictographic record, but attention was called to the record by Doctor Walter Hough of the National Museum, who received the above information, in turn, from Doctor Bovallius, to the effect that the record refers to the avocations and hunts of one entire year.

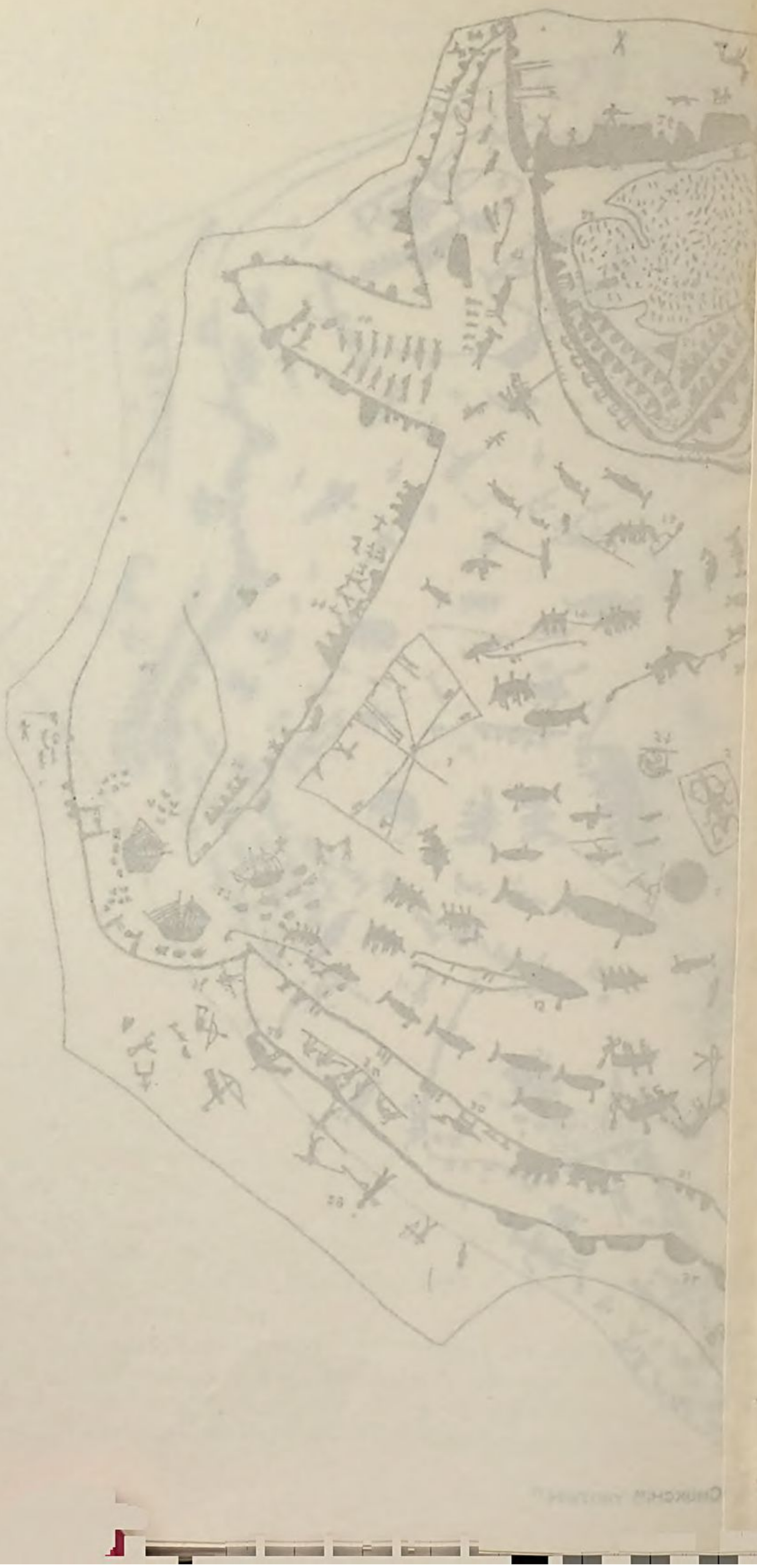
The preceding paragraph was written one year ago and the interpretation given at that time, and in connection therewith, was based upon the application of Eskimo pictographs of known signification, and upon information possessed relative to such interpretation in general.

"HISTORY OF A YEAR OF TH



OF THE CHUKCH."

PLATE 81.



Having within the past few days had opportunity, and occasion, to further examine the literature bearing upon the Swedish Polar Expeditions, I learn that this plate forms one of the illustrations given by Mr. Hans Hildebrand in his monograph on primitive art, and forming a chapter in one of Baron Nordenskiöld's works.[1] In speaking of the generally intelligible state of the pictographic characters, he remarks as follows:

"Ich will es allerdings nicht auf mich nehmen, von allen diesen Bildern eine befriedigende Erklärung zu geben, die Hauptzüge sind jedoch so deutlich, das sie nicht misverstanden werden Können. Nahe den Contouren der Haut laufen auf beinahe allen seiten breite Linien, welche an mehreren Stellen zu breiten Flecken aufschuellen. Diese Linien stellen den Strand dar, die Flecken sind zuweilen Höhen, zuweilen Zelte, die letzen theils an den regelmässigen Konischen Formen, theils an den ŭber die Zeltspitze hinausgehenden Enden der das Gerippe des Zeltes bildenden Stangen erkennbar—diese Kleinen hervorstehenden Enden finden sich auch auf den modernen Abbildungen der Tchuktschen-Dörfer."

The following interpretation is given as viewed from the Eskimo standpoint, as the entire collection of figures of animals, whales, ships, human beings, and every other character is typically Eskimo, and the system of recording, as well as the type of characters themselves, was undoubtedly obtained from the Eskimo by copying other like records of ivory obtained from the natives of the American coast, or possibly from the Yúit, who are near neighbors of the Chukche, and who are, furthermore, the Asiatic representatives of the Eskimo. Neither is it known that the Chukche were at all proficient, originally, in recording pictorially their records, literature being generally silent on that subject, and nothing appears in the collections of the National Museum that bears any relation to ornamentation of any character whatever and marked as of Chukche origin.

Believing therefore that the record under discussion is Eskimo, the interpretation is given from the standpoint of our knowledge of Indian characters. The presence of the two disks, Nos. 1 and 2, denote the sun, No. 1 being in Indian pictography a *black sun*, or night, while No. 2 represents the summer sun as it usually appears a little above the northern horizon. These two scenes therefore would confirm the statement given by Doctor Bovallius as covering the period of one year. About the outer margin of this record, and marked by indentations and irregularities, appears the shore line, upon the outer margin of which toward the border of the record are various scenes depicted as occurring upon a solid surface, while within the line generally are various scenes, as whale hunting, etc. The outlines of habitations are also scattered at intervals, as in Nos. 3 and 4, apparently in the midst

[1] Studier och Forskningar föranledda af mina resor i höga norden. Stockholm, 1884. Pls. and ill. This work was reprinted in Leipzig, 1885, under the title of "Studien und Forschungen veranlasst durch meine reisen im hohen Norden."

of the water, but this results, no doubt, from the fact that large blank spaces had been left after the aquatic scenes were completed, and the habitations were then placed upon the most available space. In No. 3 will be observed a vertical pole with cords stretched out to various sides of the pole, while beneath are represented four human beings. The import of this is not clear, but in fig. 4 we have the outline of an underground habitation very similar to many of those represented on the ivory rods. Over the entrance is placed a votive offering, shown by a vertical line with a short cross line attached to the top, beneath which is a human being with arms extended from the head as if reaching to something above him. Upon the dome-shaped portion of the habitation are three human beings, one crawling by the side, while two are engaged in peeping down through the smoke hole to see what is going on within. On the inside are three natives, one on the floor, while the second is seated on the bench or projecting boards placed around the interior, which also serve as beds, while the third appears to be hanging by his feet from a horizontal bar. Whether this is simply an acrobatic feat or not, we have no means of determining. At No. 5 is another object in the shape of a parallelogram within which two human-like objects are seated, facing in opposite directions. These characters are very similar to the Shoshonian pictographs as found among the cliff remains of northwestern Arizona. The hands of one of these characters are elevated, with the fingers outspread, as if making gestures, while the other has his hands placed toward the ground, with fingers spread. It is probable that this represents some shamanistic idea.

Among the various representations of umiaks are some very interesting ones, those in Nos. 6, 7, and 8 being particularly well drawn. At No. 9 is one which very much resembles the petroglyphs, or the petrographic representation of boats as found in Sweden, of which an illustration is given in plate 76. A fine illustration of harpooning is shown in No. 10, the floats being attached to the line, while the animal is shown as attempting to escape, at the same time blowing water above his head. A similar exploit is shown in No. 11, the harpoon having been cast and the whale followed by the umiak represented in No. 12. In No. 13 is shown an umiak, from which a harpoon is being thrown at a seal, while the native in the stern is elevating his paddle in imitation of the signal to denote concentration. This is a notice to the accompanying kaiaks that the harpoon has been cast and that the assisting hunters are to surround the animal struck.

In No. 14 we have the interesting illustration of a whale being harpooned, the float appearing behind, while a second harpoon has been thrown into him, the line of which is still attached to an umiak, which in turn is connected by a continuous line to a second umiak, both boat loads of hunters in this wise keeping up with their foray. In No. 15 a whale is likewise shown with two harpoons and floating lines attached.

Upon the opposite side of the illustration is seen a pregnant whale (fig. 16), the body of the larger animal being lifted partly, while within is portrayed a smaller whale with the head directed toward the head of its parent. A little to the left of this are some well-drawn illustrations of sledges, to which three dogs are hitched, No. 17, while around to the left are the outlines of several natives holding their arms aloft as if experiencing surprise or joy at something in which they are interested. At No. 18 is shown an indentation representing a little inlet in which a whaler is shown anchored. Near the vessel are natives in various attitudes, as if engaged in conversation or barter, while above, in No. 19, are four small triangular bodies projecting toward the water, which denote habitations, very much in form like the ordinary Indian tent.

At No. 20 is the outline of a large bear being attacked by two natives, the one in front pretending to strike him with some large object, while the man behind him is in the attitude of using a spear. Quite a settlement is represented at a projecting point of land, No. 21, the lines upon which are continuous dark bodies, both round and triangular, representing habitations of various kinds.

In No. 22 are represented six small scaffolds, and from the opposite side of this point are three others which may represent burial scaffolds, or they may possibly be intended for food storage only. At No. 23 is the shore line, the short projecting lines radiating therefrom apparently denoting sedges or grass, while the lines extending around the village appear to denote a rise in the land corresponding to the contour lines. In No. 24 is shown an individual upon a loft, with arms outstretched, as if making signals. In No. 25 two habitations are shown, with another scaffold denoting the end of the settlement. The inclosure between Nos. 24 and 25, within which are vast numbers of short lines, seems to denote a marsh with sedges, or reeds, or other aquatic plants, while in No. 26 we have a continuous line of blackened spots denoting the contour of a mountain range upon which we find at several points human beings, one with a spear, while another has his arms outstretched as if attracting attention. Beyond this range are indicated various animals, conspicuous amongst them being the deer. This apparently denotes a hunting ground. At No. 27 is another inlet in which are represented three whalers or whaling ships, while upon the shore we find two pairs of human beings in which one person of each pair seems to hand forward some object to the other, who is shown with outstretched arms as if to receive it. About the ships are shown numbers of umiaks loaded with natives who have come to trade. In No. 28 is another indication of a bear hunt, three natives participating in this attack, two armed with bows and arrows, while the third has only a spear. In No. 29 is shown what appears to be a hostile encounter between several natives, and actual hostility is taking place as shown in No. 30, where two are engaged in grappling with one another, while their companions stand by in various attitudes of surprise or alarm.

Along the shore line indicated at No. 31 are numbers of habitations and scaffolds, as observed elsewhere, while at No. 32 are a series of black projections which evidently denote hills, as these are also shown at No. 26. The native shown in No. 33 appears to have shot an arrow into some animal, while the native in front of the latter is in the attitude of thrusting his spear. Absence of horns seems to indicate a doe, or possibly a bear, although the length of the limbs would preclude the latter idea. At No. 34, however, the figure of a bear is drawn more carefully. In No. 35 is shown a herd of reindeer, while in No. 36 is shown another whaling ship, beneath which are four kaiaks loaded with individuals who have come after trade. A curious illustration is that shown in No. 37, in which quite a string of reindeer are attached to sledges. The native in No. 38 is apparently driving back the animals who are heading off in that direction. In No. 39 is the outline of a habitation with the accompanying horizontal rack, from which meat or other food is shown suspended. The character in No. 40 is, without doubt, the outline of a net, and resembles in almost every respect similar ones found in the pictographs made by the natives of the American coast. In No. 41 is a horizontal line with five animal heads protruding. These would seem to denote walruses, but from the fact of the projections above the head they are probably intended for deer who have broken through the ice, or may be swimming, toward which the umiaks are hastening, as shown above. No. 42 represents a number of individuals with arms extended and hands directed toward the ground, which resemble very much some of the characters on the drill bow (plate 68, fig. 3.

Since the above interpretation was dictated, I have had the opportunity to consult Captain E. P. Herendeen, a gentleman thoroughly familiar with the country and the natives of both sides of Bering Strait. Upon submitting to him the chart for his examination as to the geographic location referred to, the following additional information was obtained, as well as his approval in the belief that the coast natives [Eskimo] were more likely the authors of the record than the "Deermen" [Chuckche].

That part of the record marked No. 40 comprises the coast of the Holy Cross Gulf; and extending backward to No. 18, which denotes Plover Bay, are observed whales and a whaling ship, denoting a common occurrence in past years for whalers to enter one of the numerous inlets, seek a good anchorage, and there make the required catches instead of sailing in the open sea. Whalers are said to have been common at almost every favorable point.

The point of land at No. 19 is East Head, and is precipitous, while a small village is located near the entrance, of which my informant could not give me the native name. Opposite the hull of the vessel is a long, narrow black line, which represents a sharp spit of land actually occurring at that point in Plover Bay.

At No. 23 is a point of land which is recognized as Indian Point. The shore has a rocky appearance, and immediately back from the surf line appear some contour lines, upon which are the representation of scaffolds, as before noted, which Captain Herendeen says are caches of the natives, while the houses are scattered along in rows. The irregular area between the village and the ridge of hills at No. 26 is a marsh. The hills are also in actual existence and beyond them is a good hunting ground, as indicated by the artist.

To the right of Indian Point, in the midst of an inlet at No. 43, is Arakan Island, formed like a hump, with a straight line on one side to denote the water line. The line at No. 44 covers an inhabited stretch of land, commonly called the Michigme, and located on a bay of the same name. Several habitations are visible, and a number of human forms are drawn near to them.

At the right-hand end of the Michigme settlement is an inlet showing three whales, near each of which is a pair of human beings, one person in the act of handing to the other some object, the import being trade, the purpose of the visit of the natives.

The lower or opposite shore, marked Nos. 30, 31, 34, and 36, Captain Herendeen is not positive whether it may represent a continuation of the Asiatic shore or St. Lawrence Island, the locality where the Asiatic coast natives obtain oil and various articles with which their country is not well stocked, returning therefor wooden vessels, poles for tents, frames for boats, etc., which are primarily obtained from the Chuckche, as the latter come from the inland regions by means of sledges, as shown at No. 17.

From the general appearance of the drawings, the continuity of shore lines, with the exception of a small and apparently insignificant break at No. 45, would indicate that the Asiatic side alone was intended to be shown, and not the opposite American shore. The statement, too, that the record is a "year's record" should also be taken into consideration.

At No. 46 is an indentation probably intended to represent St. Lawrence Bay. There is quite a herd of seals indicated, clearly denoting the presence there in great numbers of that animal. Habitations of various kinds line the shore line, to indicate a settlement of natives. At No. 47 is shown a harpooned walrus, followed by a native in a kaiak, who has his arm raised as if about to cast a second weapon. No. 48 has already been alluded to as a marsh, the short lines being indicative of the sedges growing at that locality. No. 49 is a skin tent, near which is lying upon the ground what appears to be intended for a sledge. The latter is in imitation of the Chuckche type, as may be observed by comparing those at the opposite side of the chart in connection with the sledges to which reindeer are hitched, near No. 39.

The general resemblance of these teams of the Chukche is, in general, very much like those of the Samoyeds, and I can not refrain from

introducing herewith as plate 82[1] an illustration published by Mr. Jackson in his work on "The Great Frozen Land," which illustration is a reproduction from a photograph. The middle, covered sledge, is one used by women, the remaining one being for goods and men.

No. 50 denotes a village, the tent poles protruding from the tops of theledges. Along the shore are more habitations, and two umiaks filled with hunters are shown in the water. At No. 51 are two natives making an attack upon a bear. One of the hunters has a spear, while the other is armed with bow and arrow. A third hunter, a little to the right, has shot his arrow into the animal, and has extended his open hand outward, to indicate to the others that he has "cast a weapon," in imitation of the custom of whalers when they elevate the paddle, or spread hands, to inform their companions of their action and to request concentration of boats to secure the game.

At No. 52 is a group of six men. Two are going forward with a spear, while the two in the middle are making gestures. The pair at the right are in close embrace, apparently in combat. No. 53 illustrates the method of spearing seal through the ice, very similar to that shown at No. 31. The small ring, however, denotes the breathing hole made by the seal, this being absent in the latter instance. Nos. 54, 55, and 56 are obscene figures, and not worthy of reproduction.

Various illustrations of Chuckche art are given by Mr. Hans Hildebrand,[2] and in every instance the products resemble the figures on plate 10, and appear as if they had been drawn with a pencil or sharply-pointed brush. The general type of the portrayals are like those of the Eskimo, clearly showing artistic relationship. In the same connection are shown, also, a series of line drawings, reproductions from drill-bows from Port Clarence, some of them being so like those in the collection of the National Museum as to lead me to bel eve that the originals used by Mr. Hildebrand and by me were the same, or that they were made from copies or duplicates by the same Alaskan artist.

On plate 9 are represented six pieces of decorated bone slabs obtained from the southeastern neighbors of the Eskimo—the Thlinkit Indians. The specimens are selected at random from a necklace bearing a total of fifteen. They were the property of a shaman and formed part of his decorations, but whether they were believed to possess mystic or other virtue is not known.

The interest connected with this lot consists in the decorations upon the pieces of smooth bone. The ornamentation is typical of the Eskimo, as may be perceived by reference to numerous illustrations submitted herewith, and was apparently adopted in imitation of similar designs observed in the possession of Eskimo shamans, or such as may have been introduced through the medium of intertribal traffic. The trade route along the northwest coast has before been referred to as one of the most interesting culture routes of that part of the Ameri-

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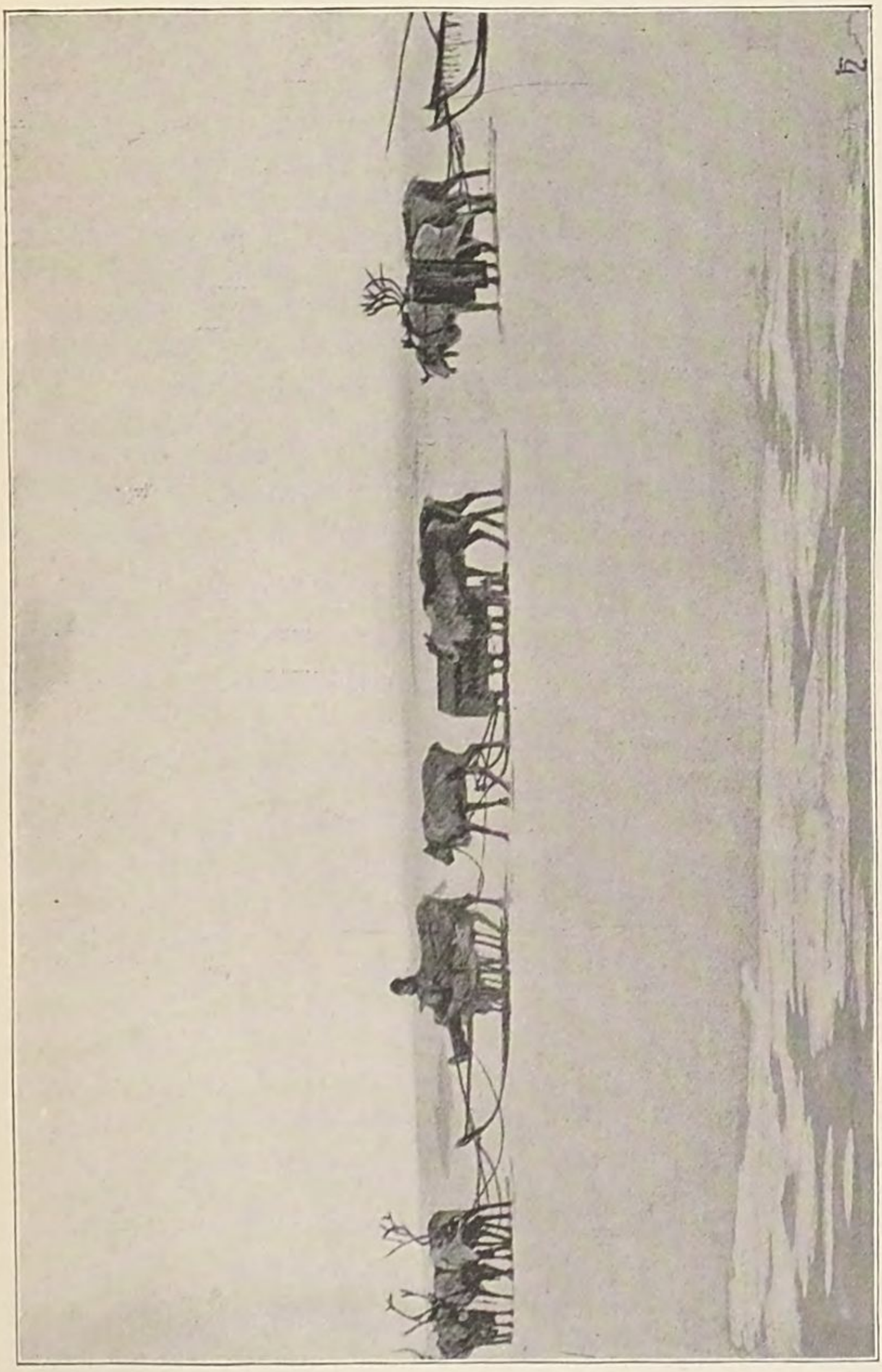
[1] London: [date ?] plate opp. p. 68.

[2] De Lägre Naturfolkens Konst. Stockholm, 1884.



SAMOYED REINDEER TEAMS.

can continent, but with an almost total absence of evidence to the contrary, the direction of the movement of culture and art designs has been in the opposite direction to that illustrated by the present instance. In other words, the Haida and other influences have been pushing steadily northward and westward amongst and beyond the territory of the Thlinkit, and not from the latter areas eastward and southward.

By reference to the illustrations in the plate, it will be observed that the concentric circles, apparently made in the same manner on all the pieces where present, were made by pieces of metal filed to a V-shaped form, one apex or side being left a little longer, perhaps, than the other, so as to more easily serve as the center pivot. The rings are of different width from the outer, showing that they were not made by an instrument with movable arms, in imitation of a pair of dividers. Furthermore, the diameters are not exactly of the regulation size, as would be found in a common manufactured bit, but the outer rings are less than one-fourth of an inch in diameter, being almost seven-thirty-seconds—an unusual size. The inner circles are scant three-sixteenths of an inch in diameter, clearly indicating that the tools were of aboriginal workmanship, though made of imported metals as well as imported instruments.

The arrangement of circles as in fig. 3, plate 9, is also in imitation of Aleutian and other Eskimo patterns, and foreign to the ornamentation of the Thlinkit, as far, at least, as illustrated in the products of that tribe now in the collection of the National Museum. Reference has already been made to a like arrangement of circles on some of the ancient British coins, referred to at page 819, and a closely resembling example of which is shown in plate 47, fig. 1.

The strong resemblance between some of the carvings of the Eskimo and those of the cave dwellers of the Dordogne has been referred to by various authors.

Mr. Edward T. Stevens remarks that "It is singular that, except at La Madelaine, none of the bones appear to have been gnawed by beasts of prey." The cave people are believed, therefore, to have occupied the caves permanently or to have closed them when deserted, and to have excluded carnivorous animals which might otherwise have been attracted by the accumulation of bones.

Doctor A. B. Meyer, director of the Royal Zoological and Anthropological Museum in Dresden, has recently published some magnificent folio volumes on the ethnographic materials from various localities—from the Philippines, New Guinea, etc.—and in Volume IX of the series presents some illustrations of combs bearing decorations, which would at a cursory glance suggest the type from which the Eskimo ornamentation was obtained for the comb shown in plate 32, fig. 4. The several specimens of workmanship of the Nigritos above mentioned may be found by reference to Doctor Meyer's plate 2, figs. 1, 2, and 3.

Plate 65, fig. 4, is a thread case of reindeer horn, marked as from "Ooglaamie." This is interesting, because of the peculiar portraiture of reindeer horns, in which these projections are exceedingly tall and straight, as compared with the art work of other localities. The most interesting figure connected with this is the representation of a kaiak, immediately above which are two nucleated rings, exactly like those shown in the petroglyphs from Sweden.

Plate 7, fig. 1, represents an arrow straightener made of reindeer antler. The specimen measures $6\frac{3}{4}$ inches in length, and is surmounted by the outlines of a reindeer's head, the small knobs only indicating the rudimentary horns. The eyes are made by the insertion in small perforations of three glass beads. The nostrils and mouth, as well as the ears and the external meatus, are all very true to nature.

An incised line extends along the spine from the occiput to within an inch of the rear end, and two incised lines, one on either side of the neck, run parallel therewith.

This specimen is very interesting as comparing very favorably with some of the specimens figured by Messrs. Lartet and Christy,[1] which are found in the cases of Dordogne.

An exceedingly interesting arrow straightener of walrus ivory is shown on the same plate, fig. 2. The reindeer, which is portrayed in outline, has the head thrown forward as in rapid running. The legs are gathered up close to the body; the ears are indicated by mere perforations, while the eyes were originally inlaid, one still retaining a plug of dark wood. The perforation in the body—for the insertion of spear or arrow points—was made by sawing the spaces between the perforations made by drilling, the saw marks yet remaining where the angles were formed.

The perforations in the arrow straighteners in the Museum collection are all at an angle of about 20° to 40°, so as to permit the inserted piece to extend backward toward the longest projection of the straightener, in order that a sort of V shape is formed, the two ends being thus more readily grasped by the one hand, so as to produce stronger and more steady pressure than if both hands were used.

A number of deeply incised and uncolored figures of reindeer are engraved over the body of the utensil, and but a single character differing therefrom appears to be that of a shaman, shown near the point of the perforation, his two arms being extended and his head decorated with horn-like projections, as if the result of a ceremonial mask.

The third specimen (fig. 3 on plate 7) also represents an arrow straightener, the head end of which ends in the outline of the fore quarters of a bear. The eyes are made of two blue beads inserted in perforations, and the teeth are indicated by incisions with the graver. The fore legs are made to extend downward over the front of the per-

[1] Reliquiae Aquitanicæ London, 1875, Pl. B. XIX, XX.

foration so as to give additional strength to that part. The specimen is slightly decorated on one side with the outline of a human being with arms extended, a line extending from the head along the middle toward the perforation; on one side is the drawing of a wolf, while beneath it is a flintlock gun. Upon the other side is the representation of a reindeer, with two smaller animal forms incised, while beneath the former is the rude portrayal of another flintlock gun, the flint being indicated by an unusually strong line projecting from the raised hammer.

The general outline of these animal forms appears at a first and careless glance to be very like the examples figured by Messrs. Lartet and Christy, but upon close inspection the difference between the several types becomes more and more apparent. As before intimated, if the cave dwellers of France were in such an intellectual status as is usually claimed, the artistic work as evidenced in their etchings on horn appears vastly superior to that of many peoples far in advance in civilization.

Further discussion on this subject is not deemed appropriate in this connection, but will be renewed in a paper the purport of which is intended to be an examination of the relative merits of the art work of primitive peoples.

Similarities of design with divers significations, and dissimilar patterns with like purport, occur in all parts of the habitable globe, and, as before intimated, the concept giving origin to such designs should in all instances, where practicable, be sought for among the peoples who are the authors thereof. In like manner, it is of the highest importance to obtain the native artists' interpretation of any obscure or conventionalized characters, as such are often apparently intelligible from their resemblance to characters of known signification, whereas the result of inquiry may sometimes be rather startling, if not open to the suspicion that the uncultured artist is himself unconsciously in error.

APPENDIX.

The following list of gesture signs were collected during the summer of 1882 in San Francisco, California, where an intelligent Kadiak half-caste was met with under circumstances which enabled him to devote his exclusive attention to the subject of the transmission of thought without the use of oral speech. This person was the offspring of a Russian father and a Kadiak mother, and during his youth had almost constantly accompanied his father in trading and collecting peltries for the Russian Fur Company. After the transfer to the United States of Alaska, this man, Vladimir Naomoff, continued in the service of the Alaska Commercial Company, of San Francisco, California, visiting the various settlements of natives on the mainland and inland to the Copper River Indians [Kutchin or Kenai], a tribe of the Athabaskan linguistic family. In this manner Naomoff became thoroughly familiar not only with Russian, English, and the Kadiak dialect, but with half

a dozen or more other native dialects, which enabled him to observe and acquire the various resources which many of the natives, meeting as strangers, would be compelled to employ to enable them to communicate in ordinary contact, and also in the representation of graphic methods whereby to communicate to owners of houses of a visit and the import thereof.

The collection of gestures was made, together with many others, from most of the Indian tribes west of the Mississippi River, and deposited in the library of the Bureau of Ethnology, through the courtesy of which I am enabled to give them publicity in this connection.

GESTURE SIGNS OF ESKIMO.

BAD.

Place the flat hands, with the palms forward, in front of their respective shoulders, the fingers extended and naturally separated, then throw them forward and backward alternately, the face at the same time assuming an expression of disgust.

BEAVER.

Make the sign for tree; then snap the teeth and hook the curved index horizontally inward toward the face from a position in front and to the right of it; then extend the left fist edgewise to the front and left of the body, the right extended toward the same direction though on a higher plane; then pull them simultaneously back toward the right, in a jerky or tugging manner. Conception: *Tree, cutting down with the teeth, and dragging away log.*

BEAVER (abbreviated sign).

Indicate the canines by sticking the forefingers upward and forward from the corners of the mouth; then snap the teeth several times and hook the curved index horizontally toward the mouth from a position to the front and right of it.

BEAR, BLACK.

Pass the flat hands alternately upward and forward from the face, pulling them back again more flexed, as in imitation of his climbing a tree.

BIG. (Broad.)

Pass both flat hands, palms downward, from a position before the body outward toward their respective sides.

BOAT.

Place the clinched hands at the left side of the body, the right higher than the left, and pass both simultaneously horizontally backwards toward the left hip. Conception: *Using the paddle.*

BOIL, TO.

Snap the fingers upward from the inner surface of the tips of the thumb; at the same time move them upward and downward in small circles about 2 feet from the ground. Conception: *The bubbling of boiling water.*

BORN, TO BE.

Place the extended fore and second fingers (or all the fingers) against either side of the epigastrium and throw them simultaneously downward along the body, outward and forward in a curve. Conception: *Pelvic curve followed by head of child in birth.*

BROTHER.

Make the sign for mustache in imitation of pulling the hair upon the upper lip forward, followed by the sign for man by lifting the hand, and then the sign for mine, clinching the fist and thrusting it forcibly forward edgewise toward the ground toward the lower part of the breast.

BURY, To. (Buried.)

This sign made to follow that for man, or a man dead or killed.

Place both hands nearly at arm's length before the body, palms down, about 8 or 10 inches apart, and 18 inches or 2 feet from the ground; then draw them backward simultaneously toward the body, slowly.

CHIEF, HEAD.

Make the sign for man (mustache); then place the flat right hand before the face, at some distance, fingers extended and separated and pointing upward, and touch the tip of the middle finger with the extended forefinger of the left hand. Conception: *The most elevated of the whole number.*

CHIEF'S WIFE, HEAD

Make the sign for *chief, head* (mountain natives); then place the flat hand at the height of the face, palm inward, fingers extended and separated; then flex the thumb at the first joint and lay the tip of the index upon it just back of the thumb nail; conclude by passing the right hand downward over the right side of the head and outward toward the shoulder—*hair, woman.*

COLD.

Imitate shivering as from cold. Sometimes the clinched hands are brought forward in front of the breast, as is involuntarily done when suffering from the cold.

COME, To. (Infin.) CAME.

Bring the hand from one side of the body inward toward the breast, the fingers pointing upward and nearly collected to a point.

CREEK.

With the palms facing and about 10 or 12 inches apart, pass them edgewise forward to arm's length, then add the sign for *drink.* Course and width of water.

DAUGHTER.

Make the sign for woman (hair); designate *height,* and *mine.*

DAY.

Throw the head slightly upward with the eyebrows elevated, and throw the hands upward and outward with the fingers extended and separated, palms inward and slightly to the front.

DAY.

Hands passed upward and outward toward their respective side in a curve from near the front of the breast, and terminating at a point as high as the top of the head, but on either side of it. The eyes follow an upward direction at the same time.

DAY.

Same sign as for *sun.*

DEAD.

Cross the forearms upon the breast and throw the head back, with the eyes closed.

This gesture is also made by the natives of the interior, who are unacquainted with the customs or religion of the Russians.

DEER.—BUCK.

Place the hands with the fingers and thumbs extended and separated, palms forward, above and on either side of the head. Conception: *Horns.*

DEER.—DOE.

With the hands scoop-shaped, fingers spread and extended, imitating running, with the hands thrown downward, the movement being alternately with right and left.

DEITY. (Great Spirit.)

The same sign as given by the coast Indians by pointing upward toward the zenith, and then imitate the cross by passing the fingers of the right hand from the forehead to the breast, and then from the left shoulder to the right, instead of the right to the left.

DOCTOR. (Physician.)

Make the sign for *man;* indicate the outlines of a square by passing the right hand edgewise to the right, the left from the right side toward the left, though leaving the lines about a foot apart; then pass both hands simultaneously from the front line backward toward the body—outlines of a box; make a dotting motion downward with the bent fingers, pretend to grind something in a small vessel, then point to the south—settlements of the States—and conclude by making the sign for drink. Conception: *Man, box, contents, grinding in mortar, location, drink.*

DOG.

Represented by imitating the sound of barking—wŭ′-wŭ′.

DOG SLEDGE, TRAVELING BY.

Make the sign for *dog* by indicating the cries, both hands with fingers extended being held to the sides of the head; at the same time lean the body forward, bend the arms at the elbows, and throw the flat right hand horizontally forward as high as the shoulder, and when nearly at arm's length pass it downward in a curve, and straight backward on a level with the hip and to that point. As the right hand is moved back, the left is thrown similarly forward. Both are repeatedly moved to represent crawling over the surface.

DRIVE FORWARD, URGE, TO.

Close the hands naturally, place them before the lower part of the breast, then throw them simultaneously downward and forward and extend the fingers as the motion progresses.

EAT, TO.

Approximate the tips of the fingers and thumb to a point, place them near the mouth, and move backward and forward from the mouth quickly, but only for a short distance.

FATHER.

Place both hands (slightly curved, with the tips of the fingers somewhat approximated toward a point) a short distance from the cheeks, pointing downward toward the chin and nearly touching palms toward the *point* of the chin.

FATHER.

Make the preceding sign, to which add those for *man*—by elevating the hand—and for *mine.*

FATHER'S BROTHER.

Make the sign for *father,* i. e., by indicating the beard and making the sign for gesture, after which height or tallness is indicated by placing the hand forward in front of the body, when the right hand is placed vertically in front or to the side of the head to indicate man; this gesture is then followed by mustache. Conception: *The beard and mustache upon the tall man belonging to the speaker.*

FATHER'S SISTER.

Make the sign for father, as before, and *his,* by throwing the thumb only extended outward a little to the right; then for young woman, which is indicated by stroking the side of the head, downward, as to denote long hair, and then pinching the lobe of the ear to designate earrings.

FIGHT, TO.

Close the hands, leaving the extended thumbs lying along over the flex forefingers; then pass both hands in irregular movements, forward, downward, and backward again, quickly, as if boxing.

FISH.

Hold the right hand edgewise before the right side of the waist, fingers directed to the front, then pass it forward and a little toward the left, moving it in a waving manner from side to side.

GIVE, TO ANOTHER.

Place the thumb upon the inner surface of the index, fingers extended and joined, palm up, and pass the hand outward to one side, as if giving a small object held by the thumb and index.

GIVE, TO ME.

Place the hand with the palm up, fingers extended and joined, about 2 feet before the body; then, as it is brought in toward the breast, curve the hand slightly, placing the thumb against the index as if grasping some object which had been given.

GIVE, TO, TO ANOTHER. (Granting a request.)

Place the tips of the fingers against the edge of the thumb, thus closing the hand naturally, and pass it from near the side of the breast in a curve outward and downward toward the ground, as if laying a gift at the feet of the supplicant.

GOOD.

Place the hands with the palm downward before their respective sides of the breast and as high as the shoulders, the fingers naturally separated, extended, and slightly curved; then pass them rapidly and alternately toward the top of the breast, at the same time assuming a pleased countenance with the brows arched.

GRASS.

Place the backs of the hands near the earth, the fingers separated and curved upward; then, as the hands are thrust up and down quickly, they also move from side to side or place to place. Conceptions: *Sprouting, short vegetation, and the area thus covered.*

GRAVE, CHILD'S.

(1) Place the flat hands edgewise before the body as high as the shoulders, then pass them downward toward the ground for a distance of about 15 inches; then place the right hand edgewise at arm's length before the breast, pointing toward the left, the left between it and the breast, edgewise and pointing toward the right, then pass both downward as far as before; (2) then hold the separated and extended index and second fingers of the right hand before the face and push it upward a short distance; (3) make the sign for *write;* (4) place the flat hand or hands palm down, pointing forward about 18 inches from the ground; then conclude with the (5) sign for *dead.*

HABITATION. (Medicine Lodge. Kacígi.)

Indicate a large horizontal square (exaggerated sign for *box*); then make the sign for roof (high) by passing the flat hands, from a point above and in front of the head, outward toward their respective sides and as far down as the waist, finger tips pointing to place of starting; make the sign for *man* (mustache), indicate one by elevating the index, then raise the second finger—*two;* then the third—*three;* and finally the little one—*four;* then make the sign for *entering* a house by passing the right flat hand, pointing, forward and slightly downward under the left flat palm, forward nearly to arm's length; then make the sign for *man* (mustache), and that for *bow,* indicate *two, three, four,* and *entering* the lodge as before, then place them to *four* corners of the imaginary building.

Make the signs for *shaman* (abbreviated), *four,* and *come,* by bringing the curved though elevated index from the front and right to before the breast; then pass the right flat hand horizontally forward under the left palm also, to indicate *entering the Lodge.*

Indicate a large horizontal circle with both hands from nearly at arm's length backward toward the body; then make the sign for *man* (mustache), and move the body up and down and place the hands to the front and sides as if *dancing* around the circle just indicated.

HOT (weather).

Pass the slightly bent hands, palms downward, from before the cheeks, upward and outward as far as the top of the head. At the same time expel the breath several times, as in Ha! Ha! but not above a whisper.

HUNGRY.

1. Make the sign for *eat*, then rub the hand downward over the stomach and abdomen.

2. Make the sign for *eat*, then that for *nothing*.

HUNT, TO (for work or game).

With the palm down and the fingers directed forward, pass the hand rather quickly from side to side at a distance of about 20 inches before the face.

HUSBAND.

Make the sign for *man* (mustache), for *mine*, and *sleep*.

I, ME, MY, MINE. (Possession.)

The tips of the fingers placed gently to the middle of the breast, and at the same time make a slight inclination forward of the head.

KAIAK (Baidarka).

Place the closed hands on a level with and about 15 inches before their respective shoulders, palm or sides to the front. Then pass the left fist downward, backward, and outward toward the left, and in a curve continue upward, forward, and back to point of starting, i. e., the right follows the motion of the left, maintaining its distance as in commencement. When the left turns up and back on its course, the right begins a similar gesture on its side. "Represents the manner of using the double-blade oar (or paddle) of the coast natives."

KILL, TO. KILLED.

Place the right forearm horizontally forward from the elbow, flat hand, palm downward; the left flat hand pointing upward and forward from the left side; then, as the right hand is rotated outward and the back down, throw the left palm straight across and downward over the right forearm.

KILL, TO (with a gun).

Point the left forefinger forward at arm's length, the index pointing in the same direction from the right eye; then make the sign for *to kill, killed.*

KILL, TO (with a knife).

Make a forward and downward thrust with the fist, outer edge down, then conclude instantly with the sign for *to kill.*

KILL, TO (with a knife).

Thrust the right closed hand edgewise downward and toward the front, quickly, coming to an abrupt termination when about as low down as the height of the waist.

KILL, TO (with an arrow).

Simulate shooting with an arrow; then make the sign *to kill.*

LAND OTTER.

The flat hand edgewise (or the extended index) in a curve to the front—as for whale, in direction though not so high—and give several quick whistles as if calling pigeons.

LIE. (Falsehood.)

Make the sign for *talk;* then throw the hands outward and forward, palms down and slightly curved, at the same time puffing with the mouth—*bad.*

LODGE (Indian).

Place the inner surfaces of the tips of the extended fingers of both hands together, the wrists being only an inch or two apart.

Similar to a common Indian gesture.

LODGE (white man's).

1. Lay the edge of the extended index across the extended forefinger, the first joints touching.

2. In addition to the preceding, extend the left thumb and place on the extended index.

3. With the index and second fingers of both hands extended, place them together so that they cross about the first joints, the right index above.

MAN.

1. Pretend to catch the ends of the mustache with the hands and twist them outward from the face to right and left.

2. Pull the fingers and thumbs over the sides of the upper lip as if twisting and pulling outward a long mustache, then throw the right hand, palm forward, before the right shoulder, pointing upward.

MAN (old).

Place the finger tips of the slightly curved hands together before the chin, though about 6 inches from it, palms toward the jaw, then pass them upward toward their respective sides of the head; then imitate walking with a staff, by passing the closed fist edgewise forward and downward in a circle several times.

MANY.

Slap the palms quickly toward one another before the breast, fingers pointing upward and naturally extended and separated. Refers to "many-times counted-fingers."

MOON.

Close the eyes while indicating a circle with the hands above and in front of the head; then pass the flat hand, edgewise, out toward the front and right from the center of the breast.

MOTHER.

Close the hands, incline the head forward, then pass the hands upward from the back of the head, forward, and downward toward the forehead, the motion corresponding to the curve of the head, but the hands about 3 or 4 inches from it.

MOTHER.

Make the sign for *woman*, and to be *born*.

MOTHER'S BROTHER.

Make the sign *mother* [i. e. *women*, to be *born*, and *mine*], then for *tall*, by indicating height with the flat hand palm down; *man*, by elevating the hand, and that for *mustache*.

MOTHER'S SISTER.

Make the signs for *mother* [*woman*, to be *born*, and *mine*] and *young woman*; conclude by throwing the fist with the thumb extended in a pointed manner a little to the right, indicating *hers*.

MUSKRAT.

Curve the left fingers and thumb and bring the tips almost to a point, leaving a slight opening, palm down, and horizontal, finger tips pointing toward the right; then bring the extended index pointing from the left side directly toward the left, in an upward curve first, then downward and forward into the opening left at the tip of the left.

NIGHT.

Incline the head toward the breast with the eyes closed, and place the flat and slightly bent hands with the palms down before the brows, the finger tips almost touching.

NO.

Place the curved hands edgewise with the backs forward, the fingers touching and pointing toward the breast, then throw them outward toward their respective sides a short distance, though rather smartly.

NOTHING. (Have nothing.)

Throw the extended hands horizontally forward and outward toward their respective sides from a position before the breast.

OCEAN.

Make the sign for *big*, *broad*, and that for *kaiak*—indicating double-bladed paddle.

PEOPLE.

Move the elevated index with the palmed surface forward, from side to side, before the face. "Men at various places."

The index is an abbreviation of the general sign for *man*, and this was the only instance in which it was used.

PORCUPINE.

With the palms directed toward and near the ground, imitate slow walking by moving them alternately forward and backward; stoop over to the front, throw the separated fingers backward toward the hip, then throw the extended index violently outward and backward.

"Imitates slow movement of the animal, the spiny covering, and the direction of the spines thrown from the tail."

PORPOISE.

Place the right hand in the same position as for *whale*, make the motion to the front less in extent, and accompany with a whistling sound from the left corner of the mouth, resembling the sound píū.

RAIN.

Place the flat hands on a level with the face, palms down, fingers pendent, and move the hands alternately up and down, blowing gently with the mouth at the same time.

RIVER.

Make the sign as for *creek*, the hands being held much farther apart, then pass the right hand edgewise forward to arm's length, in a serpentine manner.

"Course and width of water containing fish."

SEA OTTER.

Flex both hands, place the outer edges together just before the neck, palms toward the face, throw the head back, open the mouth to full extent and imitate the guttural sound of X or ch twice or three times, at the same time making a downward pull with the hands.

SETTLEMENT.

Indicate a large circle, horizontally, by passing the hands in semicircle, right and left, from nearly at arm's length backward to the breast; then place the tips of the fingers of both hands together, leaving the hands and forearms leaning outward and downward to their respective sides, the distance between the elbows being about 24 inches.

The large-sized roof house indicates plurality in this instance.

SHAMAN (complete sign).

Make the sign for *grass*, *herbs*, then pull it from the ground by grasping forward with one hand, closing it and pulling it toward the body; then the sign for *to boil*, add the sign for *give*, and for *drink*, and conclude with that for *man*—mustache. Conception: *The man who boils herbs and gives the liquid to drink.*

SHAMAN. (Sorcerer, conjurer.)

Shake the hands, with the fingers spread, violently on either side of the head, imitate the cawing of a crow (or the barking of a dog) with the mouth, and flap the hands downward before the shoulders, then strike upward on either side of the face and forward, and with the scoop-shaped hand pretend to catch something in the air, and shake the hands thus placed, upward and downward, several times.

NOTE.—"The bird spirits are good, the animal, bad ones."

SHAMAN (common, abreviated sign).

Throw the hand upward from either side of the head [the upper arms horizontal] and wave the hands, with fingers extended and separated around in short circles, horizontally.

SHAMANESS.

Make the sign for *woman* and that for *shaman*.

SICK.

1. Place the flat right hand over the left breast, and the left over the right side below the right forearm; at the same time throw the head to one side, with eyes closed, and breathe heavily—uttering slight moans, if illness be extreme.

2. Throw the head and body to one side, breathe heavily, and lay the right arm across the breast with the hand over the left breast, and lay the left hand across below the right, so that the left hand touches the right forearm near the elbow, "internal suffering."

Cuts and fractures are indicated pantomimically, after which the above sign is made, to illustrate specifically the nature of the sickness.

SISTER.

Make the signs for *young woman* and *mine.*

SLEEP.

Bring the palm of the flat right hand toward the head, and incline the head to the right at the same time, with the eyes closed. Sometimes the palm touches the ear.

SNOW.

Make the sign for *rain;* then indicate depth with the flat right hand. This is not accompanied by blowing round, as the gesture for rain.

SON.

Indicate height with the flat right hand, then make the sign for *mine.*

STOVE, NATIVE.

Place the flat hands edgewise above and in front of their respective shoulders, about 20 inches apart, then pass them earthward as far as the hips; then pass the flat right hand, palm down, from the left side to the right as high as the top of the head, the left hand at the same time moving similarly from right to left and about 10 inches below the right. Then thrust the curved index several times toward the partially opened mouth. "Form of house—on poles and oblong—and sign for eat—food." Literally *food house.*

SUMMER SHELTER, TEMPORARY.

Place the separated and extended fingers of one hand against those of the other, the wrists about 8 inches apart, then draw the hands downward and outward a short distance to their respective sides; then pass the flat hands from a position in front of the face, and over the spot indicating the top of the roof in the preceding gesture, outward and downward to their respective sides; indicating first an angular roof of sticks; second, covering of skins giving it rotundity.

SUN.

Place the hands, with extended fingers upward at arm's length before the head at an angle of about 70°; then pass them outward, downward, and inward, indicating a circle of about 12 inches in diameter; then throw the extended and separated fingers upward and outward from the upper periphery of the imaginary circle, with palms to the front—rays of light. "Radiating sun," "light."

TALK, TO; TALKED.

Place the tips of the index, second finger, and thumb together; then as they are moved forward a few times from the same point at a distance of about 6 inches before the mouth, open them slightly as if letting fly that which had been held by them.

TIME, AGO. (Past time.)

Pass the upright flat left hand, back first outward toward the left, throwing the head slightly in the same direction.

TOBACCO (Coast sign).

Indicate a small box by passing the flat right hand edgewise to the right arm, the left toward the left, leaving a space between them of 6 inches; then pass both simultaneously from front to back—same distance between palms; then rub the approximated finger tips into the left palm and put left-hand fingers into the mouth, as if poking in a "quid of tobacco."

"Taking tobacco from a box." The coast natives carry tobacco in small wooden or other boxes.

TOBACCO (gesture as made by the Mountain or Kenai Indians).

Indicate a circle on the ground by passing both hands from a common point, outward, backward, and inward, of a diameter of about 10 inches, then make the sign for *fire;* then place the tips of the fingers of the right hand into the palm of the left, pretend to pick up ashes from the indicated fireplace, and mix with contents of left hand; then take the "mixed preparation" and place into the cheek, so as to push it out with the fingers.

Tobacco quids are carried behind the ear, and when wanted to chew, ashes are mixed with them, for pungency, etc.

TO-MORROW.

Make the sign for *one*, for *sleep*, and for *day*.

TRAP (Marten).

Place the closed left hand before the breast, palm inward, fore and second fingers extended and separated, then introduce the index at right angles between them and snap them together. "Represents the trap used in the capture of martens."

TRAP (mink and weasel, or for those animals).

Place the flat left hand before the body, palm upward, finger tips directed downward; then place the wrist of the flat right hand upon that of the left, the finger tips pointing forward and upward, then slap the front of the hands together.

"Represents the form and fall of the trap used in the capture of these animals."

TREE.

Pass the elevated and extended index upward before the face as high or higher than the top of the head; then from the point of termination of the movement pass the right and left hands upward and outward to their respective sides, fingers extended and slightly separated.

"Stem, and branches."

TRIBAL SIGNS (Coast natives generally).

Make the sign for *man* [mustache] and imitate paddling a boat—on one side only.

"Canoe men."

TRIBAL SIGNS. (Island people.)

Indicate a large horizontal circle by drawing the hands outward, backward, and inward toward the breast from a point nearly at arm's length; then add the sign for *people.*

The sign for *island*, here, is the same as the first part of the sign for *settlement.* The specific addition indicates the difference.

TRIBAL SIGN (Kiateχ'amut).

Make a sign for *man* [*mustache*], then indicate a queue by drawing the extended index downward, outward, and backward from the upper posterior portion of the head.

"Queue men, i. e., the men who wear queues."

TRIBAL SIGNS (Ko'losh) [Kol'tsan].

Make the sign for *man* [mustache], for *river*, and for *mountain*, then place the right closed hand with the back forward and downward, leaving the index slightly flexed so as to point upward.

"Mountain-river men."

TRIBAL SIGNS (Russian).

Place the right closed hand with the palm up pointing downward and outward to the right, the index only partly extended and curved upward—pipe bowl; then push the hand forward a short distance—length; then pretend to grasp a stick by placing the hand to the right corner of the mouth, the index and second fingers above, the thumb pressing from below—holding pipe; then give several vigorous puffs.

"The pipe smokers."

NOTE.—It is affirmed that "pipes were not smoked prior to the advent of the Russians."

TRIBAL SIGNS (Tai′-aut) [Aleutian].

Hold the hands edgewise and about 8 inches apart, pointing horizontally forward, then pass the hands forward and gradually to a point representing the sharp bow of a boat; then place the two fists, palms forward, as high as and forward from the shoulders, throw both hands downward, backward, and outward toward the left, then similarly to the right side, retaining the relative distance between the hands always—manner of using the double-blade paddle.

TRIBAL SIGNS (Ti-nai′-na) [Tenan Kutchin].

Both hands flat and edgewise, pointing horizontally forward; place the wrists together, the fingers and palms directed outward, forming an angle of about 40°; then pass the hands forward and outward and inward again until the finger tips join—outline of wooden boat; then imitate movement as if working single paddle, as in the sign for Kadiak.

TRIBAL SIGNS (Tiai′na).

Make the sign for *man* [mustache]; then make the sign for *fire* as high upward, from near the ground, as the face.

"The men who have big fires."

WHALE.

Bend the flat right hand edgewise toward the ulna; place it before the right side pointing upward and to the front, allowing the thumb to be erected slightly so that the tip points upward; then pass the hand upward, forward, and downward, describing a curve with the convexity above. At the same time, accompany the movement with a sound represented by "piū′ from a higher to a lower note, embracing about six notes.

"Movement of whale and sound."

WIFE, MY.

Make the sign for *woman, earring*—with both hands and ears—and conclude by making that for *sleep*.

WIND.

Throw both palms alternately forward from the corresponding sides of the body, and blow violently with the mouth.

WINTER.

Place the flat hands with spread fingers as high as the head and about 2 feet before it, finger tips touching, then pass them in downward curves outward toward their respective sides—form of hut; then hold the left flat hand and forearm pointing horizontally toward the right, and pass the right hand, palm down, forward, under and beyond the left arm, when the right hand again rises a little. Conception: *Entering by a deep channel—underground.*

WOLF.

Throw the right hand (or both right and left) directly forward from the face, with the fingers spread, and as the hand reaches arm's length clinch the thumb and fingers; at the same time open the mouth to the fullest extent and force out the breath audibly and snap the teeth.

WOMAN.

Pass the partly flexed hands from the top of the head downward toward their respective shoulders. The hands follow the outline of the head and shoulders, but do not touch them. Conception: *Long hair.*

WOMAN (old).

Make the sign for *woman;* then hold the closed hand before the face, palm forward, the index being raised and bent toward the front. "Curved and bent of body of an old person."

YES.

Nod the head forward until the chin touches the breast, once or twice.

YESTERDAY.

Make the sign for *one*, for *sleep*, and for *past time*, by passing the upright flat left hand slowly outward toward the left, leaning the head a little in the same direction.

YOUNG MAN.

Pass the naturally closed hands from the front of the body backward around the sides of the waist, then bend the elbows and move the arms as if running. Conception: *Belt, and activity and vigor.*

YOUNG WOMAN.

Make the sign for *woman;* then gently grasp the lobe of the ear with the thumb and index and pass the hand down slowly as far as the front of the shoulder—"long hair" and "earring."

SPECIMENS REFERRED TO IN PRESENT PAPER.

The specimens selected from the collections of the National Museum, upon which to base the present paper, are enumerated below, and in all instances, where possible, the National Museum Catalogue number is attached, as well as the nature of the specimen, the locality from which obtained, and the name of the collector. Other information of interest as to the character of the etchings engraved therein is also added in a few examples.

The list is divided into two general classes, the former embracing the drill bows, bag handles, and other long rods; while the second comprises all other inscribed pieces, such as utensils, weapons, ornaments, toys, and other undetermined specimens.

The leading word refers to the article under consideration, which is followed by the locality where it was obtained. The name of the collector is next given, which, in turn, is followed by the numbers under which it is placed in the accession list of the National Museum.

The entire series of numbers, from first to last, is in order so as to facilitate identification by that means as well as the kind of object referred to.

The list forms but a small part of the collections from Alaska, but is sufficiently comprehensive for the present paper.

DRILL BOWS AND BAG HANDLES.

DRILL BOW. Anderson River. R. Kennicott. 2171. Has a long thong attached. The bow is of ivory, 13 inches long and three-fourths of an inch in height, being much heavier and rounded in form than others. There is no ornamentation.

BAG HANDLE. Norton Sound. L. M. Turner. 24412. Plate 31, fig. 2.

BAG HANDLE. Norton Sound. L. M. Turner. 24417. Plate 31, fig. 3.

BAG HANDLE. Norton Sound. L. M. Turner. 24415. Plate 38, fig. 1.

BAG HANDLE. St. Michaels. L. M. Turner. 24425. Plate 38, fig. 2.

BAG HANDLE. Norton Sound. E. W. Nelson. 24427. White ivory specimen with characteristic zigzag pattern in parallel-line space.

KUNTAG HANDLE. St. Michaels. [L. M. Turner.?] 24429.

DRILL BOW. Norton Sound. L. M. Turner. 24533. An old stained bow, with rude figures representing a whale being harpooned, with float in the air. Following this is an umiak, and a native behind a hillock watching some reindeer. The hillock is surmounted by a tree, though the figure resembles smoke issuing from a hut. The opposite side has four vessels, one with natives, and a man near a walrus, behind a wolf, next a reindeer, and before this another wolf and a goose. The oblique figures at the end are ornamental.

DRILL BOW. Norton Sound. L. M. Turner. 24536. Bears upon one side the figure of a stern wheel steamboat, an illustration of which is given in fig. 31. Upon the reverse a few reindeer, fox, wolf, a two-masted schooner, and a three-deck kaiak, above the latter an outline of the human figure with arms partly extended, as in gesture for *surprise*. The upper edge or rim has some decoration consisting of rude short lines arranged diagonally, though crossing at right angles to one another.

DRILL BOW. Norton Sound. L. M. Turner. 24537. An old bow, having on one side a number of seals, divided into two divisions by eight upright whale flukes. Rather decorative. Opposite side has men and dogs.

DRILL BOW OF HORN. St. Michaels. L. M. Turner. 24538.

DRILL BOW. Norton Sound. L. M. Turner. 24539. One side of the three decorated faces bears figures of seals and walruses, with hunters armed with bows and arrows, and with spear. A bear also is shown, while on the reverse is a herd of reindeer being hunted.

DRILL BOW. Norton Sound. L. M. Turner. 24543. But one side and the bottom edge are decorated. The side bears a hunting record, three human figures, at the middle, being interested in the result of shooting at some reindeer and other animals. At the left end is a kaiak, the occupant of which is after a large bird and two walrus. Upon the bottom edge are four hunters, each in his kaiak, after four whales, three of which have been harpooned. The hunters are represented as holding their paddles horizontally above the head, the gesture or signal that they have cast the spear or harpoon, and also to indicate "assistance wanted" in so far that the animal may be kept sight of and not permitted to escape.

DRILL BOW. St. Michaels. L. M. Turner. 24545. This bears some of the best incised of the ordinary art work of this locality.

DRILL BOW. Norton Sound. L. M. Turner. 24546. Made of reindeer horn, and bears upon the under surface a row of eleven seals, one before the other, heading toward the right.

DRILL BOW. St. Michaels. L. M. Turner. 24548. Made of reindeer, and bears two rows of these animals divided in the middle by three persons—one hunter and two attendants making gestures of attention to herd and indicating its whereabouts.

DRILL BOW OF HORN. St. Michaels. L. M. Turner. 24551.

DRILL BOW OF HORN. St. Michaels. L. M. Turner. 24552.

DRILL BOW. St. Michaels. L. M. Turner. 24553. A white piece of ivory, with record of a man smoking while one hands an arrow to the third who is shooting a reindeer. Other animals are also portrayed farther to the right. Dog sledge and native, as well as houses, are shown on next side, while upon the third face are two longitudinal border lines with interior crosspieces of ornamentation, denoting the wavy or zigzag pattern. See also figures and accompanying references *passim*.

DRILL BOW. St. Michaels. L. M. Turner. 24556. Piece of four panels, two of which have umiaks with hunters. Opposite side has zigzag patterns by pairs, both inclosed between the usual parallel lateral lines.

DRILL BOW. St. Michaels. L. M. Turner. 24557. Made of reindeer horn; is ornamented on one side with deeply cut and uncolored outlines of birds, wolves, deer, men, and mythic animals, several appearing like alligators.

DRILL BOW. Sledge Island. (?) 28021. Although so marked, the record in accession catalogue is not in accord and the collector's name not given, which, without doubt, should be Mr. Nelson's.

DRILL BOW. Norton Sound. E. W. Nelson. 33179. Bears on the convex surface some dancers. At the other end is a well-drawn umiak, from which an animal is running. The lateral edges are ornamented with deeply incised blackened creases, while the under side bears but two human figures, in the attitude of boxing or sparring.

DRILL BOW. Norton Sound. E. W. Nelson. 33181. The bow is curved edgewise, plain, with the exception of a heavily incised crease at the base of either side. One of these creases shows evidences of repeated scratchings with a finely pointed tool.

DRILL BOW. Norton Sound. E. W. Nelson. 33182. A yellowish, rather old, specimen with various figures, nearly all of which are characteristic.

DRILL BOW. Norton Sound. E. W. Nelson. 33183. A four-sided round-edged piece of old ivory, 13½ inches in length, upon one side of which only a simple figure occurs—that of a man with his arms curved and hands resting on his hips.

DRILL BOW. Norton Sound. E. W. Nelson. 33184. This bears marginal lines extending from end to end, at one end being a kaiak with a single hunter, while at the other are four inverted umiaks; apparently not a finished drawing.

DRILL BOW. Norton Sound. E. W. Nelson. 33188. Made of reindeer horn, and is rather thin and deeply creased on either edge by one groove, and by two grooves upon the upper and under sides. The lower side bears sharply incised engravings of reindeer hunting; the herd of animals is lying down, while the hunter is crawling up on all fours, being hidden by a hillock.

DRILL BOW. Norton Sound. E. W. Nelson. 33189. A bow made of reindeer horn and bears sharply defined characters of boats, sledges, meat racks, etc.

DRILL BOW. Norton Sound. E. W. Nelson. 33190. Bears upon convex side a herd of reindeer, with one hunter at the right end of the rod.

BAG HANDLE. Kogik. E. W. Nelson. 36375.

DRILL BOW. Norton Sound. E. W. Nelson. 37178. A triangular bow, with figures of conventional seals along the lower side; conventional T-shaped whale flukes along a horizontal line upon the one side of the upper surface, while on the other side are the conventional rear ends of whales, with the flukes projecting.

KANTAG HANDLE. Norton Sound. E. W. Nelson. 37742. Plate 14, fig. 3.

DRILL BOW. Shaktolik. E. W. Nelson. 38521. Bears upon one side nineteen reindeer, no doubt purely for decorative purpose. Upon the opposite side are also twelve reindeer, though heading in the opposite direction. These, too, are all alike, or nearly so, and appear to be intended rather for decorating the bow than as a record only.

DRILL BOW. Shaktolik. E. W. Nelson. 38522. Hunter partly obliterated, but to his right are five whale flukes setting on end T-shaped and indicating that number of whales captured. The opposite side—the bow being made to stand edgewise—bears a reindeer which is being shot at by a hunter. The latter is lying flat and aiming with a gun. At the other end are three granaries.

BAG HANDLE. Shaktolik. E. W. Nelson. 38523. Six inches in length and rather stout. It is yellow with age, and bears upon the upper side one base line, to which are attached eight figures of concentric circles with deep central pits.

BAG HANDLE. Yukon River. (?) 38539. Plate 38, fig. 3.

BAG HANDLE. Location unknown. 38752. Plate 31, fig. 1.

BAG HANDLE. Norton Sound. E. W. Nelson. 38776. Plate 31, fig. 4.

DRILL BOW. North of Norton Sound. E. W. Nelson. 38781. Both upper and lower sides decorated with nucleated rings, the central perforations or incisions being rather deep. The circles measure three-eighths and five-sixteenths of an inch in diameter, arranged without any special care or purpose, simply following the general horizontal direction of the faces. One edge has whale flukes and the other triangular summer habitations in regular order and apparently for decorative purposes only.

DRILL BOW. Port Clarence. T. H. Bean. 40054. This bow bears hunters spearing seals through the ice, some of which are illustrated elsewhere. Upon the other side are several figures of mythic animals. Upon one edge is a village of triangular-shaped dwellings, with meat rack in middle.

KANTAG HANDLE. St. Michaels. E. W. Nelson. 43434. Plate 80, fig. 2.

DRILL BOW. Shaktolik. E. W. Nelson. 43810. Delicate and beautiful engraving marks this as very superior to most specimens. The reindeer is shown on one side; delicately engraved umiaks and a kaiak are on the next adjoining side, while on the reverse are partly obliterated characters, shown and described in text in figures.

KANTAG HANDLE. Unalakleet. E. W. Nelson. 43820. Plate 58, fig. 3.

DRILL BOW. Nubuiakhchugaluk. E. W. Nelson. 43931.

KANTAG HANDLE. Nubuiakhchugaluk. E. W. Nelson. 43936.

DRILL BOW. Cape Darby. E. W. Nelson. 44206. Much curved and old specimen. The length straight across from point to point is 14 inches, while the height of the curve is 4 inches. Both sides are decorated, the narrow edges having only parallel lines, excepting one place ornamented with an umiak containing three persons The upper side bears a variety of delicately engraved figures, occupied with various avocations, and many of them represented in attitudes to denote action and gesture. The under side bears a herd of reindeer, the animals, after passing through a slough or river, approaching a hunter who is armed. Beyond this person is another engaged in cutting up a reindeer which is lying upon its back. At the right side are four other reindeer in various lifelike attitudes.

DRILL BOW. Cape Darby. E. W. Nelson. 44207. Bears a few coarsely engraved characters, at one end being the upper line of a whale's figure, to which are attached lines like fins or spines from the head down toward and nearly touching the flukes.

DRILL BOW. Cape Darby. E. W. Nelson. 44208. Walrus hunting and scaffolded umiaks are shown on one of the two lower surfaces, the upper flat surface being without any engravings. The work is very graphic, and some of the boats in the water are scattered, to resemble the work of Japanese artists—as pertains to an attempt at perspective in this instance. The specimen is shown as a text figure.

DRILL BOW. Cape Darby. E. W. Nelson. 44209. Plate 24, fig. 1.

DRILL BOW. Cape Darby. E. W. Nelson. 44210. Records on two sides consist almost entirely of reindeer in various attitudes, and some very lifelike. A few animals are drawn foreshortened.

DRILL BOW. Cape Darby. E. W. Nelson. 44212. Old yellow ivory specimen, decorated on four faces. The dorsal surface has two figures incised to the depth of over one-sixteenth of an inch, the figures consisting of rudely drawn animals and human beings.

At the side is a series of outlines of the human figure, with arms in various attitudes, as in records portraying ceremonial dances, though in the present instance the figures appear seated upon the ground, or base line. Boats and walruses are also to be seen nearer the right end, while at the left is a seal hunt.

Upon the opposite side are several umiaks, going toward the right, in pursuit of a whale. In the middle of the record are some indefinite outlines, among which, however, may be detected that of a reindeer.

The under side bears upon it a number of animal forms at the left, while a well-drawn whale is next portrayed, followed by another, whose body is thrown partly from the water, having been harpooned by a hunter in the pursuing umiak at the right. A whale fluke projects from the water behind the boat, while two cubs and an adult bear are next shown, approaching three large figures, which seem to be intended for heavily robed or dressed natives.

DRILL BOW. Cape Darby. E. W. Nelson. 44213. Upon the dorsum of this piece is a group of ships and native boats. Rude engravings of ships occur on one side, while white men's houses are represented at other portions.

DRILL BOW. Cape Nome. E. W. Nelson. 44366. Delicate and sharp engraving marks this specimen as characteristic of this locality.

The herd of deer shown in fig. 9 are from this piece.

DRILL BOW. Cape Nome. E. W. Nelson. 44367. Represents a walrus hunt and harpoon throwing. Illustrations have been selected from this rod and reproduced in connection with hunting and fishing.

BAG HANDLE. Cape Nome. E. W. Nelson. 44398. This fine large specimen has numerous figures of flying birds and human forms resembling the Ojibwa thunder bird. Whale and other hunts are also portrayed.

DRILL BOW. Cape Nome. E. W. Nelson. 44399. A strong piece measuring $17\frac{1}{8}$ inches in length. The two flat sides and one lateral edge have been decorated.

BAG HANDLE. Cape Nome. [E. W. Nelson. ?] 44427. Bears crude though typical characters of umiak, +-like bird figures, and several human figures. The specimen is yellow and considerably worn.

DRILL BOW. Cape Nome. E. W. Nelson. 44400. A narrow specimen, measuring $13\frac{1}{4}$ inches in length, five-sixteenths of an inch high, and one-fourth of an inch thick. The engravings represent walrus hunting, and two of the kaiaks are unusually interesting, the spear rack or guard being indicated in the first kaiak, while on the second the harpoon line is shown with the twists and curves observable when a coiled line is cast out.

DRILL BOW. Cape Nome. E. W. Nelson. 44401. Plate [23], fig. 1.

DRILL BOW. Cape Nome. (E. W. Nelson. ?) 44464. Interesting from the fact that both slopes of the under surface bear rows of umiaks, some with meats and some without, so placed as to suggest ornamentation rather than an attempt to record historic or other information.

Upon the upper side the entire length is also divided by a median line. Upon either side the space is filled with various figures, such as camp scenes, dances, and various avocations.

The specimen is rather yellow with age, and the figures partly filled with a brownish black substance.

DRILL BOW. Cape Nome. E. W. Nelson. 44465. A yellow, old, piece of ivory, with a sharp-lined series of small figures at the end upon the upper edge of the bow. There are five swimming seals, rather conventional in outline, above which three birds are seen in the forms of small cross-like characters. Before these is a figure resembling a bear(?) and still farther forward a seal.

DRILL BOW. Cape Nome. E. W. Nelson. 44466. Plate 24, fig. 4.

DRILL BOW. Cape Nome. (E. W. Turner.) 44467. The herd of deer upon the upper curve of this specimen is shown as a text figure. The lower side, and the edges also, bear camp scenes, while various human figures in attitudes of gesture are shown on the side.

KANTAG HANDLE. Sledge Island. E. W. Nelson. 44690.

BAG HANDLE. Sledge Island. E. W. Nelson. 44691.

BAG HANDLE. Sledge Island. E. W. Nelson. 44716. Measures but $5\frac{3}{4}$ inches in length, and bears upon the top some conventional "trident" tree figures, each placed alternately facing, between parallel longitudinal lines.

KANTAG HANDLE. Sledge Island. E. W. Nelson. 44717.

DRILL BOW. Sledge Island. E. W. Nelson. 45016. Parts of this are reproduced in text figure. The lines are sharp and cleanly incised. One pecularity in the figures of human beings on records from Sledge Island is that the heads are all, or nearly all, made by boring with drill. One side of another face bears an umiak with harpooned whale, following a neatly engraved white umiak containing 3 figures.

The under side bears some obscene figures, or rather those made obscene by gesture and additional drawings.

DRILL BOW. Sledge Island. E. W. Nelson. 45017. The figures of a series of habitations, boats on racks, and umiaks afloat, are all neatly and definitely incised. Upon the reverse is a settlement of two winter habitations and one scaffold, the five human figures being portrayed with hands and arms elevated, slightly inclined toward the left end of the bow, seemingly as if some further portion of a record had been contemplated but not executed. The color employed in filling the incision is black, and the entire specimen, and engravings, has a modern appearance.

DRILL BOW OF HORN. Sledge Island. E. W. Nelson. 45018.

DRILL BOW. Sledge Island. E. W. Nelson (?). 45019. The decorations on this interesting specimen are reproduced in text figure. The work is characteristic, the dancers only resembling the deeply engraved figures usually found on the specimens from Kotzebue Sound.

DRILL BOW. Sledge Island. E. W. Nelson. 45020. This old specimen presents a whaling fleet. Upon the reverse is a group of natives fishing through the ice, near by being their residence, granary, and votive offerings stuck up upon the entrance to the house.

DRILL BOW. Sledge Island. E. W. Nelson. 45025. Upper side slightly rounded, while the bottom is divided in two sides or faces. All these are decorated with sharp, fine lines, characteristic of Cape Nome workmanship. The specimen is very yellow and has an old appearance, chiefly because of the signs of long-continued use.

KANTAG HANDLE. Sledge Island. E. W. Nelson. 45154.

DRILL BOW. Cape Nome. E. W. Nelson. 45330.

DRILL BOW. Cape Nome. E. W. Nelson. 45331. An old piece of ivory with characteristic engravings. The type is recognized, if any special difference may be said to exist between this and other localities, by the thin, though sharply incised, lines and brown-black color applied to bring out the cavities. A great deal of gesticulation is always represented in connection with the portrayal of the human figure.

One of the two upper faces has upon it a herd of reindeer, the other face a seal hunt, while the bottom has the drawings of buildings and storehouses for food.

DRILL BOW. Cape Nome. E. W. Nelson. 45332. A triangular slightly curved bow, 17⅛ inches in length. The specimen is yellow from age and bears the delicate hair-like incisions or engravings characteristic of the locality from which it came. Gestures are frequently indicated, though the chief features of the bow refer to reindeer and walrus hunting. At one end is a dance, the performers being drawn in various attitudes.

On the under side are the fine lines portraying two kaiaks approaching one another, the occupants holding aloft their paddles, while between them are two seals. A little farther toward one side is an umiak with five occupants, whose heads and faces resemble birds' heads with long sharp bills.

DRILL BOW. Cape Nome. E. W. Nelson. 45333.

DRILL BOW. Cape Nome. E. W. Nelson. 45345. Bears herds of reindeer, some browsing, while others are in various attitudes upon the ground. The under side bears a herd of reindeer approaching a hunter. At the right end are two bears, apparently a mother with its cub.

DRILL BOW. Cape Nome. E. W. Nelson. 45346. Some of these etchings embody gesture signs, and are reproduced in connection with that subject.

DRILL BOW. Port Clarence. W. H. Dall. 46056. Made of a rib, is almost 12 inches across from tip to tip, and retains a thong of leather for drilling purposes. There are no decorations of any description.

DRILL BOW. Fort Anderson. R. MacFarlane. A rounded bow 11½ inches long, resembling the preceding in smoothness and absence of decoration.

DRILL BOW. Golovin Bay. E. W. Nelson. 48080. A specimen yellow with age. No decorations appear with the exception of two parallel lines on both the upper and lower surfaces. The handle has been much worn by long-continued use.

DRILL BOW. Cape Darby. E. W. Nelson. 48115. An old-looking yellow specimen, upon which is the whale being dragged from the water and cut up, shown in plate 67, fig. 3.

The opposite side has the ceremonial dance, and drummer from whose instrument the sound is represented as going out over the group of dancers. Plate 72, fig. 2.

KANTAG HANDLE. Cape Darby. E. W. Nelson. 48137.

DRILL BOW. Kotzebue Sound. E. W. Nelson. 48518. A dark yellow specimen, crudely and heavily engraved with ship, walrus, etc. A good harpoon line and effect of cast is shown.

DRILL BOW. Cape Nome. E. W. Nelson. 48330. Bears solid herd of reindeer nearly 3 inches long, while on other side are reindeer, and men making gestures.

DRILL BOW. Kotzebue Sound. E. W. Nelson. 48519. An old and very yellow specimen of ivory. Four sides of the piece are decorated with several distinct styles of records. The upper or convex side bears the deeply engraved figures of whaling ships foreshortened, and habitations, probably indicating some trader's establishment. On one side is a native, drawn lengthwise, next to him being portrayed a rack with meat (fish) suspended, while next to this is a net stretched out for drying.

The next characters resemble the curved parallel lines used by the Pueblo tribes and the Ojibwa to denote the sky, beneath which are parallel vertical lines running down to the base or ground line, resembling the symbol for rain. The present figures are believed, however, to denote the aurora borealis, a like figure having been drawn for the present writer by Naomoff and verified by a Malamut Eskimo in California at the same time when the investigations were made at the museum of the Alaska Commercial Company.

A very rudely drawn figure of a winter habitation, with smoke issuing from the top, is shown next toward the right, the end of the rod bearing smaller figures of food rack, huts, etc.

The under side of the rod bears, at the left, two dog sledges being dragged forward, and preceded by nine natives running toward a large winter habitation. These natives are in various attitudes to represent locomotion, and each has a projection upon the head, as if ornamented with a plume, though it may represent the top of the furred hood.

The engraving is generally deep, and characteristic of the locality from whence it was obtained.

DRILL BOW. Kotzebue Sound. E. W. Nelson. 48520.

DRILL BOW. Kotzebue Sound. E. W. Nelson. 48521.

DRILL BOW. Kotzebue Sound. E. W. Nelson. 48522. A dark yellow specimen, apparently very old, and engraved on three sides. Figs. — are from this piece. All the engravings are deeply cut and blackened. One side bears 15 seals, 14 of which are being dragged, the entire series resembling an attempt at decorative results rather than historic.

DRILL BOW. Kotzebue Sound. E. W. Nelson. 48524.

DRILL BOW. Norton Sound. E. W. Nelson. 48525. This bow is tinged with age, and is of a decided orange along one side. Parts of the engravings, which cover the four sides, have been reproduced in plate 22, fig. 3. Many parts of some of the engravings have become so worn by long-continued use as to be too indistinct to admit of interpretation. The figures are, on the whole, rather deeply and boldly incised, and show a marked likeness to the rest of the work from the locality where it was evidently made.

The coloring matter in the incisions has assumed a deep brown color, as if the original black had become covered or replaced by dirt or grease.

DRILL BOW. Kotzebue Sound. E. W. Nelson. 48526. Very deep and strong engravings on old ivory.

DRILL, OR HANDLE. Kotzebue Sound. E. W. Nelson. 48527. This old stained piece bears upon the two upper sides a number of animal forms, one row being a series of six reindeer, together with several seals and whales. A native in his kaiak is represented with his arms uplifted, and probably the fingers were drawn spread, use of specimen having worn the surface smooth.

One underside has a long row of ten wolves and one reindeer, faced by a hunter shooting an arrow, who is accompanied by two other hunters and a dog. The other side shows a whale hunt and a walrus and bear hunt, the two hunting scenes being divided by a narrow vertical line bearing delicate cross-hatchings, and denotes the partition of the two.

DRILL BOW. Kotzebue Sound. E. W. Nelson. 48528. Plate 22, fig. 2.

DRILL BOW. Kotzebue Sound. E. W. Nelson. 48527.

DRILL BOW. Kotzebue Sound. E. W. Nelson. 48530. Specimen deep yellow with age and use. The characters are deeply incised and represent very heavy-bodied reindeer. Both sides are decorated.

DRILL BOW. Kotzebue Sound. E. W. Nelson. 48531. Plate 21, fig. 1.

WORK BAG FASTENER. Sabotnisky. E. W. Nelson. 48966. Made of a three-sided piece of ivory in which the corners have been rounded and smoothed. The ornamentations are sets of cross-lines, to the center of which are short lateral lines, and between each such transverse set are small black spots and crosses.

DRILL BOW. Hotham Inlet. E. W. Nelson. 64153. A piece originally almost square, but by perforating at the ends, from beneath, the specimen was split vertically. Both sides are ornamented, however, one side with but a few scratches, while the other has a very interesting whale and walrus hunt.

DRILL BOW. Hotham Inlet. E. W. Nelson. 64152. An old specimen with four sides crudely engraved. Shooting with firearms, dragging seals, etc., comprises the subjects portrayed. Three whale's flukes are also erected, to denote that animal, while a dog sledge, with very rude drawing of the dog.

DRILL BOW. Diomede Island. E. W. Nelson. 63621. Only 9 inches long and averages one-fourth of an inch square; yet the four sides are ornamented; three have lateral longitudinal border lines, between which are recorded numerous figures of umiaks after walrus and a ceremonial dance with one drummer. On another side is a village, showing summer habitations or conical houses, near meat racks, some boats, etc. The under side bears several animal forms, and two mythic figures resembling the water monster, i. e., an elongated four-footed and horned or crested serpent, referred to by Naomoff in connection with fig. 139, *c*.

DRILL BOW. Diomede Island. E. W. Nelson. 63623. Dark yellow or light brown piece of ivory. The four engraved sides are shown in text figures.

KANTAG HANDLE. Point Hope. E. W. Nelson. 63801.

DRILL BOW. Point Hope. E. W. Nelson. 63802. Very crude though deeply incised line, composing animals, etc., is shown on rather white ivory. An interesting whale hunt is shown; the flukes appear like detached decorative ones, attached to the rear end of bodies.

Flukes are also shown at one place; while a native crawling along on his stomach, to approach seals, is also engraved.

Upon the top edge are four birds, four different forms of representing them.

BAG HANDLE. Point Hope. E. W. Nelson. 63803. The undersurface of this stained old specimen bears the figures of eleven outstretched hides, at the right being a human figure. Upon the top face is some linear decoration, while near the middle of the specimen are figures of four reindeer, facing to the right. Portions of the figures are without the brown-black stain, the legs being slender and the hoofs indicated by minute etchings made by a sharp-pointed graver.

Upon the outer curve are a number of nucleated rings, 33 in number, and each three-sixteenths of an inch in diameter. The under side bears a median line, upon which are portrayed, in various attitudes, nine reindeer. The figures are rather deeply incised and very black. The coloring matter in several places has fallen out, as if it had become hard or dry.

BAG HANDLE. Point Hope. E. W. Nelson. 63809.

BOW OR HANDLE. "Chilcat." J. J. McLean. 67904. An almost square, slightly curved specimen, with engravings on all sides excepting the under or concave one. The top or convex surface bears, among other objects, a large umiak, the four occupants of which are indicated by the heads, arms, and paddles only, the vertical body line being purposely omitted or forgotten. Some conventional trees are used as ornamental markings. The sides bear seal hunts, and most of the records have been reproduced in the text.

Each side is ornamented by two deeply incised grooves, one at either edge of the faces of the bow, and the engravings are deeply and forcibly made, all being filled in with black.

Though marked as from "Chilcat," the specimen has the characteristic appearance of the work done by the natives of Norton Sound.

BAG HANDLE. Point Barrow. Lieutenant P. H. Ray, U. S. A. 89420. Measures 14⅞ inches in length, the upper surface being rather flat, while the under side is rounded or convex. Upon the upper surface are twelve reindeer, one behind the other and facing the left, while at the extreme right is a man holding a bow drawn, but no arrow indicated; while at the extreme right is a figure resembling an outstretched bearskin. The engravings are strongly incised and greatly resemble those made at Norton Sound and Kotzebue Sound. There is no coloring matter in any place, and it is believed that the work was not made by Point Barrow natives, but secured by them by traffic or otherwise from some locality farther south and west than Point Barrow.

The arrangement of the reindeer, the apparent similarity in all respects, and their regular spacing—between the figures—suggests that, although the record seems to be intended for a hunting score, it was also made with a view to presenting an ornamental and decorative appearance.

DRILL BOW. Point Barrow. Lieutenant P. H. Ray, U. S. A. 89424. Plate 3, fig. 4.

BONE DRILL BOW. Point Barrow. Lieutenant P. H. Ray, U. S. A. 89508. Made of a rib, measures 12¼ inches across from point to point, and is rather rudely made. Bears no decoration.

DRILL BOW. Point Barrow. Lieutenant P. H. Ray, U. S. A. 89777. Bears a vertical line with radiating lines from one side only. The ivory is pieced near one end to lengthen the bow; the coloring matter is pale, but consisted of a reddish substance resembling red ocher.

DRILL BOW. St. Michaels. L. M. Turner. 129223. Ornamented on lower side by a "solid" herd of reindeer, wolves, seals, walrus, and other animals. The incisions are deeply cut and are left uncolored, appearing light yellowish gray as compared with the dark surrounding surface. Made of reindeer horn.

DRILL BOW. Location not given. M. M. Hazen. 154071. Whaling ships in pursuit of whales and a walrus. An Innuit village is at the right. On the other side are very deeply engraved figures of habitations, umiaks on scaffold, etc. The character of work resembles that of Kotzebue Sound.

MISCELLANEOUS AND VARIED SPECIMENS.

The following are miscellaneous specimens, embracing tools, implements, utensils, toys, etc., all of which are variously marked with etchings of animals, villages, occupations, and in many instances only with lines, dots, and circles, to illustrate the application of such figures *for* the purpose of simple ornamentation.

"CORD BUTTON." Intrusive carving.

SAW. Anderson River. C. P. Gaudet. [1304.] Plate 17, fig. 2.

BONE TOY. Yukon River. W. H. Dall. 5610.

IVORY SLAB. Fort Anderson. R. MacFarlane. 7454.

BELT CLASP. Eskimo Innuit. W. H. Dall. 16140.

PENDANT FOR EAR. Nunivak. E. W. Nelson. 16199. Magemut ear pendant of ivory, marked with spiral line from one end, around the body to the other extremity.

ROUND BOX. Norton Sound. L. M. Turner. 24352. Plate 34, fig. 3.

IVORY CASKET. St. Michaels. L. M. Turner. 24606. Plate 25, fig. 1.

SPEAR STRAIGHTENER. Kowak River. Lieutenant Stoney. 27893.

HOOK. Location not given. L. M. Turner. 29618.
THIMBLE HOLDER. Norton Sound. L. M. Turner. 29731.
WOODEN BOX. Norton Sound. E. W. Nelson. 33077. Plate 34, fig. 2.
BODKIN. Norton Sound. E. W. Nelson. 33176. Plate 24, fig. 5.
BODKIN. Norton Sound. E. W. Nelson. 33177. Plate 24, fig. 6.
SNUFF BOX. Norton Sound. E. W. Nelson. 33197.
BONE ICE GUARD. Norton Sound. E. W. Nelson. 33219. Used to put over bow of kaiak to keep off ice, or injury to vessel. Plate 41, fig. 3.
BODKIN. Norton Sound. E. W. Nelson. 33257.
DRAG HANDLE. Norton Sound. E. W. Nelson. 33292.
BOW STRENGTHENER. Norton Sound. E. W. Nelson. 33309. Plate 14, fig. 5.
BOW STRENGTHENER. Norton Sound. E. W. Nelson. 33310. Plate 14, fig. 7.
BOW STRENGTHENER. Norton Sound. E. W. Nelson. 33311. Plate 14, fig. 4.
BOW STRENGTHENER. Norton Sound. E. W. Nelson. 33312. Plate 14, fig. 6.
ORNAMENTED BONE. Norton Sound. E. W. Nelson. 33315. Plate 14, fig. 1.
BEAVER CARVED OF BONE. Norton Sound. E. W. Nelson. 33356.
BELUGA CARVED OF BONE. Norton Sound. E. W. Nelson. 33373.
EAR PENDANTS. St. Michaels. E. W. Nelson. 33491.
GRAYLING. Norton Sound. E. W. Nelson. 33535.
BONE ORNAMENT. St. Michaels. ? 33640.
CARVING. Aleutian Islands. L. M. Turner. 35900.
SHUTTLE. Aleutian Islands. L. M. Turner. 35908.
EARRING HOLDER. Agaiyukchugumut. E. W. Nelson. 36011.
SEINE THIMBLE HOLDER. Kushunuk. E. W. Nelson. 36452.
IVORY ORNAMENT. Kushkunuk. E. W. Nelson. 36477.
EARRINGS. Askenuk. E. W. Nelson. 36861.
HAIR ORNAMENT. Kushunuk. E. W. Nelson. 37003. Fig. 3 of plate 42, and bears diagonal cross lines at top, and two concentric rings at each lower lobe.
IVORY BUCKLE. Agaiyukchugumut. E. W. Nelson. 37007.
"HANDLE." Chalitmut. E. W. Nelson. 37319.
CARVED ORNAMENT. Anogogumut. E. W. Nelson. 37431.
SPEAR GUARD. Anogogumut. E. W. Nelson. 37461.
CARVING OF SEAL. Unalakleet. E. W. Nelson. 37610.
IMPLEMENT. Konigunogumut. E. W. Nelson. 37664.
BODKIN. Chalitmut. E. W. Nelson. 37752. An ivory handle with steel point and ivory links. Ornamented with concentric rings and flower symbols. Plate 41, fig. 6.
SPEAR GUARD. Chalitmut. E. W. Nelson. 37759.
BUCKLE. Kongigunogumut. E. W. Nelson. 37763.
EAR PENDANTS. Spugunugumut. E. W. Nelson. 38052.
BONE SEINE NEEDLE. Lower Yukon. E. W. Nelson. 38318.
HARPOON HEAD. Shaktolik. 38440.
BONE SEINE NEEDLE. Fort Yukon. E. W. Nelson. 38501.
HAT ORNAMENT. Kushunuk. E. W. Nelson. 38720.
"HUNTING TALLY." Point Barrow. Lieutenant P. H. Ray, U. S. A. 89487. Plate 58, fig. 1.
THIMBLE GUARD. St. Michaels. E. W. Nelson. 43459. Plate 35, fig. 1.
TOY FISH. Cape Vancouver. E. W. Nelson. 43593. Bone fish 1½ inches in length, flattened with pictograph of wolf (?) and trident figure, also other ornament upon upper side, with human figure below.
IVORY WEDGE. Nunevak Island. E. W. Nelson. 43738.
THIMBLE GUARD. Unalakleet. E. W. Nelson. 43861. Plate 35, fig. 6.
HARPOON HEAD. "Alaska." E. W. Nelson. 43949.
SCRAPER. Cape Darby. E. W. Nelson. 44180.
WOODEN BOX. Cape Nome. E. W. Nelson. 44457.
TOBACCO BOX. Sledge Island. E. W. Nelson. 44766.

IVORY GAMBLING STICKS. Sledge Island. E. W. Nelson. 45006. These have very thin lines engraved upon them, not with any reference to the value of the sticks, but made probably during an interval of idleness to while away time. The characters represent rudely and carelessly drawn habitations, while in one instance they are the outlines of human pigmies.

CREASER. Sledge Island. E. W. Nelson. 45140.

SAW. Port Clarence. T. H. Bean. 46145. Plate 17, fig. 1.

COMB. Cape Prince of Wales. E. W. Nelson. 48174.

WEDGE. Nunevak Island. E. W. Nelson. 48289. Ivory "splitter or wedge" for splitting small pieces of wood.

FUNGUS ASH BOX. Kotzebue Sound. E. W. Nelson. 48558.

NETTING SHUTTLE. Lower Yukon. E. W. Nelson. 48715.

CARVING OF FLOUNDER. Unalakleet. E. W. Nelson. 43786.

IVORY ROD. Kotzebue Sound. E. W. Nelson. 48532. This specimen is pointed at one end and has perforation at the other. Three sides are decorated in deep black stained characters of various marine animals. The spaces between some of the objects are filled in with nucleated circles.

EFFIGY OF SEAL. Kotzebue Sound. (?) 48642.

ORNAMENT. Bristol Bay. C. L. McKay. 55909. Effigy of seal, with rings and bristles inserted by means of pegs.

IVORY FISH. Point Barrow. Lieutenant P. H. Ray, U. S. A. 56578.

THREAD CASE. [Locality ?] Lieutenant P. H. Ray, U. S. A. 56615.

"MOUTHPIECE." Diomede Islands. E. W. Nelson. 63666.

"MOUTHPIECE." Diomede Islands. E. W. Nelson. 63667.

BOX FOR SNUFF. Hotham Inlet. E. W. Nelson. 64186.

EFFIGY OF WALRUS. Nashagak. E. L. McKay. 72904.

HOUSE HOOK. Alaska (?). C. L. McKay. 73034.

"BONE SKIN DRESSER." Sitka. John J. McLean. 74954.

ARROW STRAIGHTENER. Kowak River. Lieutenant G. M. Stoney, U. S. N. 127893.

POWDER HORN. St. Michaels. L. M. Turner. 129221.

PICTOGRAPH ON BONE. St. Michaels. L. M. Turner. 129277.

ORNAMENTED IVORY ROD. St. Michaels. L. M. Turner. 129284.

THIMBLE HOLDER. St. Michaels. E. W. Nelson. 129314.

MONEY BOX OF BONE. Hupa Islands. J. Curtin. 131159.

IVORY PENDANT. Nunevak Island. E. W. Turner. 16199.

BONE SKIN DRESSER. Thlingit Islands. Lieutenant G. F. Emmons, U. S. N. 168358.

BONE SKIN DRESSER. Thlingit Islands. Lieutenant G. F. Emmons, U. S. N. 168360.

BONE ORNAMENTS. Thlinkit. Lieutenant G. F. Emmons, U. S. N. 168372.

DAGGER SHEATH. Tangier, Morocco. Lieutenant A. P. Niblack, U. S. N. 168827. Plate 44.

NOTES ON THE GEOLOGY AND NATURAL HISTORY OF THE PENINSULA OF LOWER CALIFORNIA.

BY

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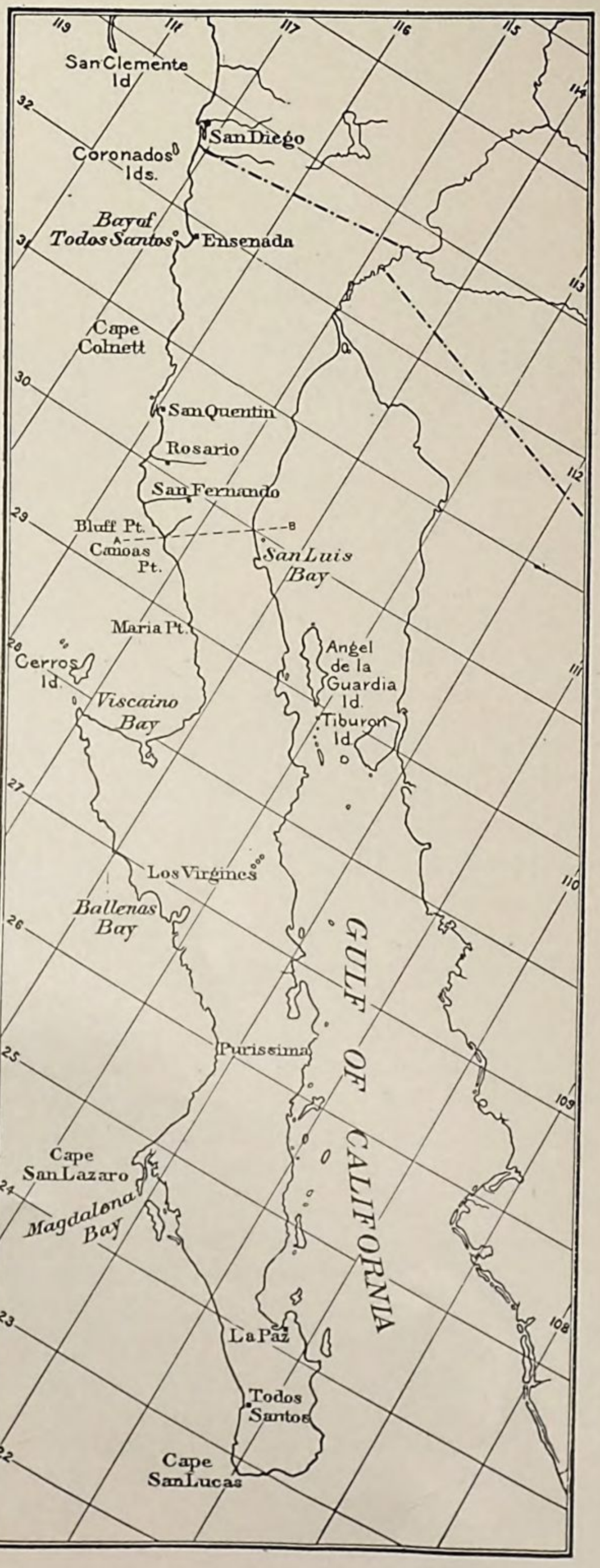

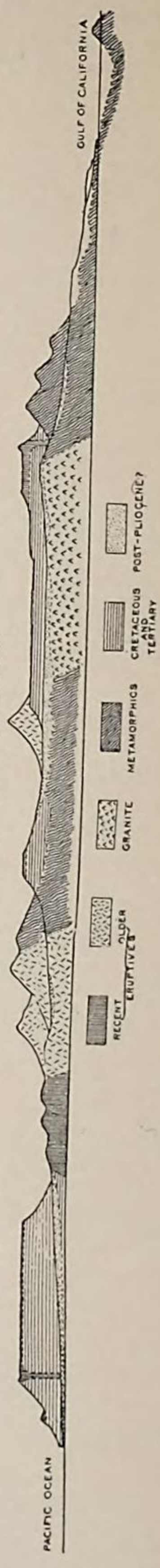

MAP AND GENERALIZED SECTION OF LOWER CALIFORNIA.

NOTES ON THE GEOLOGY AND NATURAL HISTORY OF THE PENINSULA OF LOWER CALIFORNIA.

By George P. Merrill,

Curator, Department of Geology, U. S. National Museum.

During the summer of 1892 the writer had occasion to pay a brief visit to the peninsula of Lower California, going by boat from San Diego to San Quentin, and thence by wagon and pack train to El Rosario and across to within a few miles of the Gulf Coast, the route lying approximately along the line of the thirtieth parallel. The trip was hurriedly made with the scanty equipments furnished by a prospector's outfit, and opportunities for detailed work were quite lacking. The resultant geological observations have already found their way into print, but a brief abstract from the original publication[1] may well be given here. The excuse for the present paper lies in the fact that the region, aside from being comparatively unknown and difficult of access, presents many features of interest from the standpoint of both naturalist and archæologist.

Fortunately the writer carried with him a folding kodak, and though the good work done by the instrument was in some degree undone by the carelessness or ignorance of a professional photographer in San Diego, enough remains to give, with the aid of a little touching up, the views here shown. In the pages following the remarks on the physiography and geology of the region are quoted from the paper above mentioned. The itinerary is compiled from memoranda made at the time.

(1) PHYSIOGRAPHY.

"The peninsula of Baja California is a narrow strip of broken mountainous land extending roughly from 22° 50′ to 32° 30′ north latitude, about 775 miles long and from 35 to 70 miles in width, with a general northwest and southeast trend parallel to the larger orographic features of the Pacific Slope. Its coast outline, characterized as it is at many

[1] Geological Sketch of Lower California, by S. F. Emmons and G. P. Merrill. Bull. Geol. Soc. of America, V, 1894, pp. 489–514.

points by long sweeps or reentering curves, with outlying islands and projecting points partly inclosing oval, valley-like basins, is at once suggestive of a partially submerged series of mountain chains.

"The peninsula is divided by Gabb[1] into three geographical provinces: A southern, extending from Cape St. Lucas to beyond La Paz, characterized by irregular granite mountain chains up to 5,000 feet in height, and with deep valleys containing considerable fertile arable land; an intermediate desert region, characterized by table-lands and flat-topped ridges, with a considerable extent of interior valleys, and with isolated mountain tops and ranges projecting above the general mesa level, which rarely reach an elevation of more than 3,000 to 4,000 feet. This region has no running water and springs are very scarce; a high northern portion from 5,000 to 10,000 feet above sea level forming a southern continuation of the mountain region of southern California, which has a number of running streams and large valleys susceptible of cultivation, while the higher portions contain considerable extents of pine forests.

"The limits of these three provinces are not sharply defined, but may be taken at about 200 miles in longitudinal extent for the northern, 450 miles for the intermediate desert region, and 100 miles for the southern."

* * * * * * *

"While from a first glance at existing maps it might appear that the depressions of the Mohave and Colorado deserts and of the Gulf of California were the normal southern extensions of the great depression of the San Juan and Sacramento valleys, and that the Peninsula range was therefore the normal southern continuation of the coast range, there is some reason to be found in its topographical form, and still more, as will be seen later, in its geological structure, for the assumption that the peninsula more properly represents the southern extension of the Sierra Nevada uplift. On this assumption the connection between the two would be afforded by the various en echelon ranges known as San Jacinto Mountains, San Bernardino Mountains, etc., lying to the northward, while the southern extension of the Coast range proper, cut off by the reentering angle of the coast between Santa Barbara and Los Angeles, would be represented by the chain of islands, Santa Catalina, San Clemente, etc., generally known as the Channel Islands, lying off the coast between Los Angeles and San Diego.

"To the south of San Diego the mountains come down to the sea and the mesa disappears, being only represented by an occasional patch of later beds which have escaped erosion, as at Sausal and Todos Santos, 60 miles south of the boundary. At Cape Colnett, in latitude 31°, a strip of mesa forms the immediate coast and widens southward toward San Quentin, in latitude 30° 30′, which is assumed to be about the limit of the northern or mountainous province. From San Quentin south-

[1] See article on Lower California. J. Ross Browne's Mineral Resources of the United States, 1868, pp. 630–639.

ward, as far as examined by the writers, the mesa structure is characteristic of the Pacific Coast, the table-lands rising to a height of 1,000 to 2,000 feet at comparatively short distances from the sea, and presenting bold bluffs of soft horizontally stratified beds, often capped by lava flows, which are evidently wearing away rapidly under the erosive action of waves.

"Lindgren, as a result of his observations in the vicinity of Ensenada de Todos Santos, divides the topographic features of the peninsula Sierra into three sections:[1]

(1) The coast range, rising gradually from the sea to an elevation of 3,000 feet in a distance of 20 to 30 miles. Surmounting this area several minor ranges and sharp peaks attaining an elevation of 3,000 to 4,000 feet. A rapid descent leads from the divide of the coast range to—

(2) The interior valleys, an interrupted series of depressions in the middle of the chain at an elevation of 1,800 to 2,000 feet.

(3) The eastern range, rising rapidly from the valleys and continuing as an almost level plateau, with a gentle slope up to the peninsular divide and an abrupt, almost precipitous, descent to the desert. The elevation of this remarkable plateau is from 4,000 to 5,000 feet.

"This plateau region, which supports a considerable growth of pine forest, extends, according to the meager accounts obtainable, from the boundary southward about to latitude 31°, reaching its culminating point in the high mountain mass now known as San Pedro de Martis, which is apparently the same as the snow-capped mountain called in the Narragansett report "Calamahue," or Santa Catalina (Caterina) Mountain.

"The area examined by the present writers, which extends 15 to 30 minutes north and south of the thirtieth parallel of latitude, is separated by a considerable gap of unknown country from that described by Lindgren. In this latitude the average elevation of the peninsula is about 2,000 feet, and that of its higher ridges may be taken at less than 3,500 feet. It is a singularly arid region, having practically no running water on the surface and very few permanent springs; nevertheless our experience has shown that properly located wells obtain a fair supply of water at depths of 20 to 60 feet. The climate is remarkably equable and healthful, being but little warmer than that of the coast region of southern California, and as a rule much drier. The diurnal changes of temperature are, however, very great. It is swept by continuous breezes from either coast, which appear to blow alternately about three days at a time, those from the Pacific being laden with more or less moisture, while the east winds are extremely dry. Like California, it has a rainy season in the spring, but this is generally but a few days' duration and extremely irregular and uncertain."

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[1] Notes on the Geology of Baja California, Mexico. Proc. Calif. Acad. of Science, I, 1888, p. 170. Idem, II, 1889, p. 1. Idem, III, 1890, p. 26.

"This whole region may be in one sense considered to be a mesa region, since at one time the present mesa formation extended from coast to coast, but at the present day the mesas are no longer continuous, and erosion has disclosed an underlying or buried topography, whose general features show considerable analogy with the more northern region described by Lindgren. The mesa belt proper adjoining the western coast is represented by a series of plateaus from 900 to 2,000 feet in elevation, separated by the deep canyon-like valleys of streams that drain the interior. Owing to the soft, crumbling nature of the beds, the escarpments are very abrupt, and the topography has something of the character of the Bad Lands of the Great Plains.

"The coast or western range is represented by a series of isolated peaks or ridges rising 1,000 or 2,000 feet above the general mesa level, which are partly connected together by flat-topped ridges base-leveled down to the average elevation of the highest portion of the mesa region, but which in geological structure and composition belong to the same system of uplift as the higher peaks.

"East of this range lie the interior valleys, broad, level, or gently sloping plains 10 to 15 miles in width and with an elevation above sea level of 1,800 to 2,200 feet, bounded and traversed by mesa-topped ridges and with occasional sharp peaks rising out of them. These interior valleys all drain to the Pacific through gaps in the western range and rise gently to the eastward, the same gentle westward slope being noticeable in the mesa-topped ridges.

"On the eastern edge of these valleys, at a distance of about 10 to 15 miles from the Gulf Coast, a most sudden change in topographical structure takes place. The broad, level plains, in which the drainage courses are so shallow that their direction of drainage is with difficulty recognizable, give place to deep, narrow, tortuous ravines, descending a thousand or more feet within a few miles of the mesa-topped divide. These ravines wind along a series of sharp jagged peaks, which evidently are the projecting summits of an older and partially buried mountain chain. The eastern range is represented in part by the summits of this buried range, in part by a series of isolated table-topped mountains rising to an elevation of 3,500 feet, which brings them above the summits of most of the sharper peaks to the eastward. On the immediate Gulf Coast is a gently sloping mesa, of varying width, at the base of the eastern range. To the south of the region visited, the buried mountains rise still higher than these table topped mountains and send out spurs to the westward, which apparently cut off the interior valley in that direction. To the north they do not rise above the level of the interior valley, and the mesa-topped ridges sweep over them, descending in a series of terraces or steps to the Gulf Coast.

"The rocks, of which this eastern buried range is composed, outcrop so frequently in the bottom of the interior valley that it is probable that this valley rests in part upon a plateau-like shoulder of the buried

range, and that its form was not unlike that of the granite plateau described by Lindgren in the latitude of Ensenada.

"From Gabb's description it would appear that a similar topographical structure obtains for the part of the peninsula stretching south from latitude 29° to La Paz. The eastern range has for the most part a mesa-topped crest, broken here and there by projecting ridges, which stretch in part across the peninsula and separate the interior valleys. The interior valleys, set off successively a little more to the southward and westward, become more extensive southward, one being described as stretching from La Purissima to Todos Santos (of the south), a distance of 150 to 200 miles, with an average width of 10 miles. The western range is apparently still more indistinct as a topographical feature and is not recognized by him, but the western mesa region is spoken of as stretching in varying width from Magdalena Bay, in latitude 24° 30′, to Cape Colnett, in latitude 31°."

(2) GEOLOGY.

"For purposes of geological description the region examined may be divided into the coast or mesa belt, the western range, the interior valley, and the eastern range. The immediate Gulf Coast was not visited." On Plate 1[1] is given a generalized section across the peninsula along the line A–B. Topographical features at some distance from this line are brought in to illustrate the general structure. Though not drawn to scale, care has been taken to make the section as close an approximation to nature as the data would admit. Distances were estimated in traveling to and fro and checked by rough triangulations made with a prismatic compass. The vertical scale is intended to be about four times larger than the horizontal.

COAST OR MESA BELT.

"This area has an average width of 10 to 15 miles, and in it, so far as observed, no older rocks occur than horizontally bedded, loosely aggregated clayey sands, sandstones, and conglomerates, of which the lowest horizons carry characteristic forms of the Chico-Cretaceous. In a higher horizon of this apparently conformable series a characteristic fauna of the Tejon-Eocene has been found, and in still higher beds a few forms of probable Miocene age were observed. None of these beds show evidence of any considerable disturbance, though in a few instances dips of 10 to 15 degrees and slight displacements with a throw of only a few feet have been observed. They have, however, been extensively eroded, and later deposits of post-Pliocene and possibly also of Pliocene age have been deposited upon their eroded surface. Recent eruptive rocks, both acid and basic, have cut through them and in places have been important factors in shaping topographical forms by protecting the softer beds from erosion.

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[1] From Bull. Geol. Soc. of Am., V, 1894.

"The best exposures of the lower beds were found between Canoas and Bluff points [Plate 1,] where they present perpendicular bluffs, facing the sea, from a few hundred up to nearly a thousand feet in height. These are being rapidly undermined and eaten back by the action of the waves, so that between the two points the coast line forms a bow-like reentering curve, set back 3 to 5 miles from a line drawn between the points. From either point the land rises in a series of steps or broken terraces to an extensive plateau, cut on the sea faces by short, narrow, branching ravines and presenting in general continuous bluff faces inland.

"Midway in the reentering curve between Canoas and Bluff points is the Playa Santa Caterina, where is a gap a mile or two in width between the bluffs bordering the ocean, formed by a broad valley in which are two modern stream beds draining the interior region. They are divided at the shore line by a flat-topped ridge of Chico beds, near the top of which is the remnant of an ancient stream bed whose bottom is now about 100 feet above tide water, and which is filled by a conglomerate of large bowlders and water-worn pebbles of massive rocks. This conglomerate, which is cemented by lime and iron, is so much more resisting than the soft clays of the Chico formation that the huge bowlders that fall as the cliff is undermined by wave action form a point projecting out several hundred feet beyond the average coast line. These conglomerates are probably of the same age as those which are found at various points in the canyons of the interior, and their formation evidently dates back to a time when, after the carving out of the general system of modern drainage, the waters of the ocean reached a higher level than the present, and the old drainage channels were partially filled up to the then base level. Subsequent erosion, while cutting down to a somewhat lower level and following the same general lines, has often eaten more readily into the softer beds at the sides of these recent conglomerates and left patches of them still standing, which sometimes form one wall of the canyon a hundred or more feet above its present bottom.

"The modern stream beds from Playa Santa Caterina are almost at base level for some 10 miles inland, at about which distance eruptive rocks appear from under the Cretaceous and recent beds, and then rise rapidly, reaching an elevation of about 1,500 feet within 15 miles of the coast, on the partly buried slopes of the coast range.

"Both in the broad valley and on the mesa slopes are relics of terraces which evidence a successive rising of the land above the ocean.

"The lower beds exposed in the bluffs along the coast have a gentle inclination northward and southward from Sandstone Point, about 3 miles north of Playa Santa Caterina, where massive sandstones form a slightly projecting headland. In these sandstones carbonized plant remains, too indefinite for identification, were found, and in the cracks of the immediately overlying sandy clays were traces of petroleum. From

these beds and from calcareous layers about 200 feet above were obtained the following forms, as determined by T. W. Stanton:

Arca breweriana, Gabb.
Baculites chicoensis, Trask.
Tessarolax distorta, Gabb.
Inoceramus, sp. undetermined.
Ammonites, sp. undetermined.
Ostrea, sp. undetermined.

"They correspond with forms found in the Chico beds of California and Oregon.

"From rolled pebbles of impure limestone obtained along the beach to the south of the Playa, which had evidently fallen from the cliffs above, and from a bed of similar composition in place at what was assumed to be about 1,200 feet higher in horizon, at San Carlos anchorage (collected by A. D. Foote), 8 miles north of Bluff Point, the following forms were identified by T. W. Stanton:

Cardita planicostata, Lam.
Leda gabbi, Conrad.
Urosyca caudata, Gabb.
Nucula, sp. undetermined.
Tellina, sp. undetermined.
Turritella, sp. undetermined.
Dentalium, sp. undetermined.
Crassatella, sp. undetermined.

and are considered by him to belong undoubtedly to the Téjon Eocene.

"The beds carrying Chico and Téjon fossils were not observed in direct superposition, but from the negative evidence that no decided unconformities were detected at any of the points examined, it is assumed that the two series are conformable, or that in any case no considerable disturbance of the strata took place between the times of their respective depositions.

"The great mesa or plateau, 15 miles long and 6 to 8 miles in width, which extends from the valley of Santa Caterina northward beyond San Carlos, has an elevation of from 1,800 to 2,000 feet, being somewhat higher at the northern end. The greater part of its surface is apparently capped by basalt flows, which have protected it from erosion. From a distance can be distinguished conical points rising above the level of the mesa, known as the "Sombrero," the "Hat," etc., which resemble recent craters in general form. At one point on the coast, fragments of the basalt, cemented together by crystalline calcite, have fallen to the foot of the bluff in huge masses and form a projecting point on the coast line.

"For about a mile beyond Sandstone Point the beach is covered with beautifully rounded pebbles of porphyries and a great variety of hard rocks, mostly older eruptive, whose material must have come down a ravine which drains the western face of the plateau and descends very rapidly from its summit. As no such pebbles were observed in the Chico or Téjon series, nor on the beaches to the south where no upper beds remain, it is thought probable that the mesa sandstones, which are characterized by an abundance of eruptive material, may form the upper portion of this plateau.

"Northward from San Carlos, as seen from the ocean or from commanding points of view in the interior, the same character of beds,

with their characteristic bad-land topography, extend northward to the Rosario Ravine.

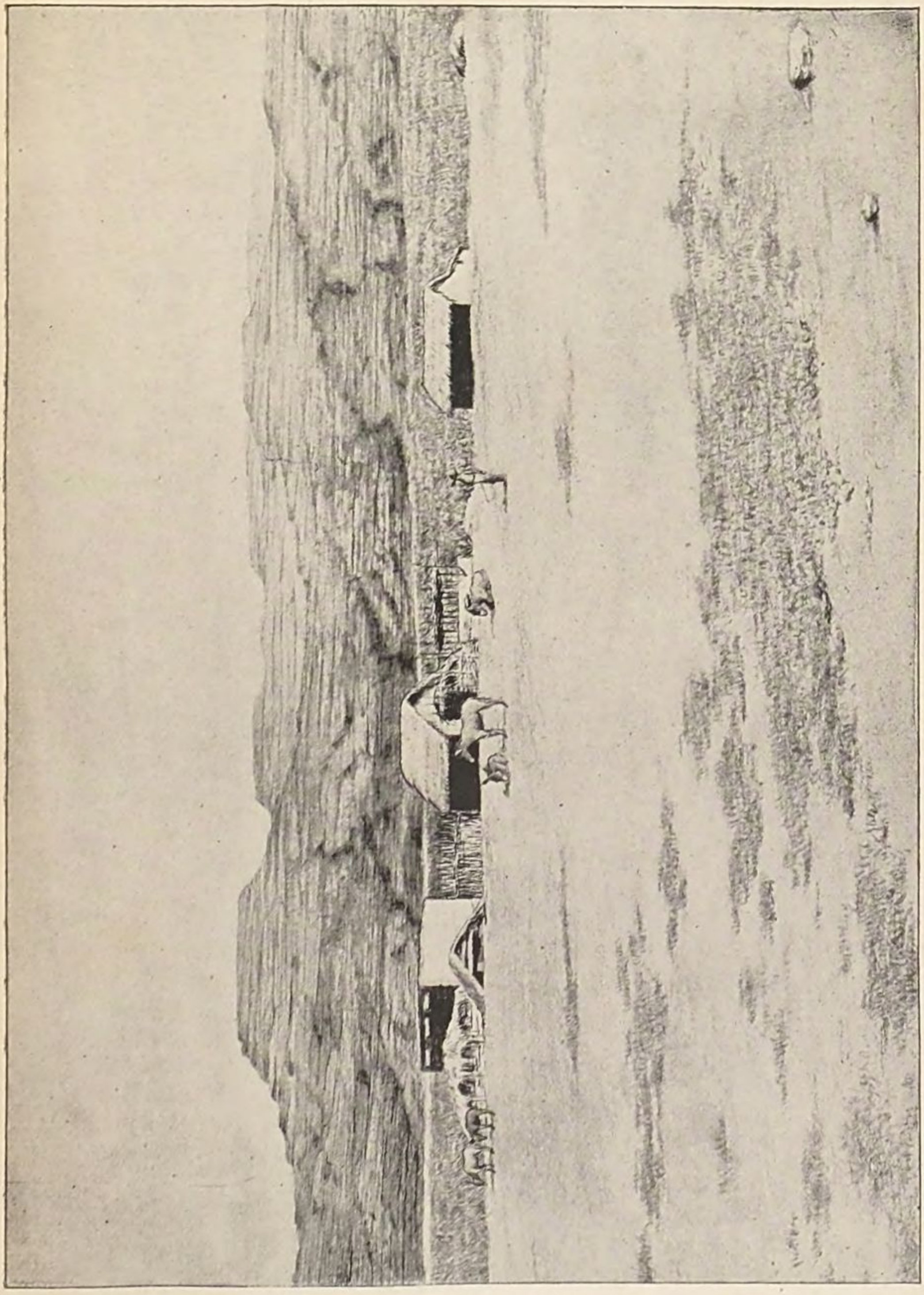
"The hamlet of Rosario is situated a few miles from the sea, in this ravine or canyon, which extends inland for some 10 or 15 miles with very gradual rise of its beds, and carries a small stream of running water that in dry seasons sinks below the surface sands. [Plate 2.]

"The cliffs of the canyon walls are eroded into castellated forms that recall the buttes at Green River, Wyoming, familiar to travelers on the Union Pacific Railroad. Opposite Rosario the bedding planes have a dip of 15 degrees to the northeastward, while the surface of the mesa is quite horizontal, and from the pebbles and recent shells on its surface evidently represents a higher level of the ocean waters, which have base-leveled it at about 1,000 feet above present sea level. For a few miles north of the mouth of the Rosario Canyon the bluffs come close to the present coast line and then gradually retreat, until opposite San Quentin they are about 8 miles inland. The immediate shore is first a terrace about 200 feet above the sea level, then at the mouth of the Socorro Valley a triangular-shaped Quaternary delta hardly 50 feet above sea level, covered with rolled pebbles and recent marine shells. The older beds forming the mesa region in this latitude, though not markedly different from those between Bluff and Canoas points, contain a larger proportion of conglomerate material and several fossiliferous beds of recent looking shells, among which were recognized *Mytilus californianus* and a fragment of Pecten, like *P. cerrosensis*, which Dr. W. H. Dall regards as indicating a probable Miocene age. These are the beds seen by Gabb on his trip and called by him "mesa sandstones." No evidence of unconformity between these and the Téjon beds was observed, and it seems probable that they may constitute the highest part of the mesa at Bluff Point, but this was not determined by fossil evidence.

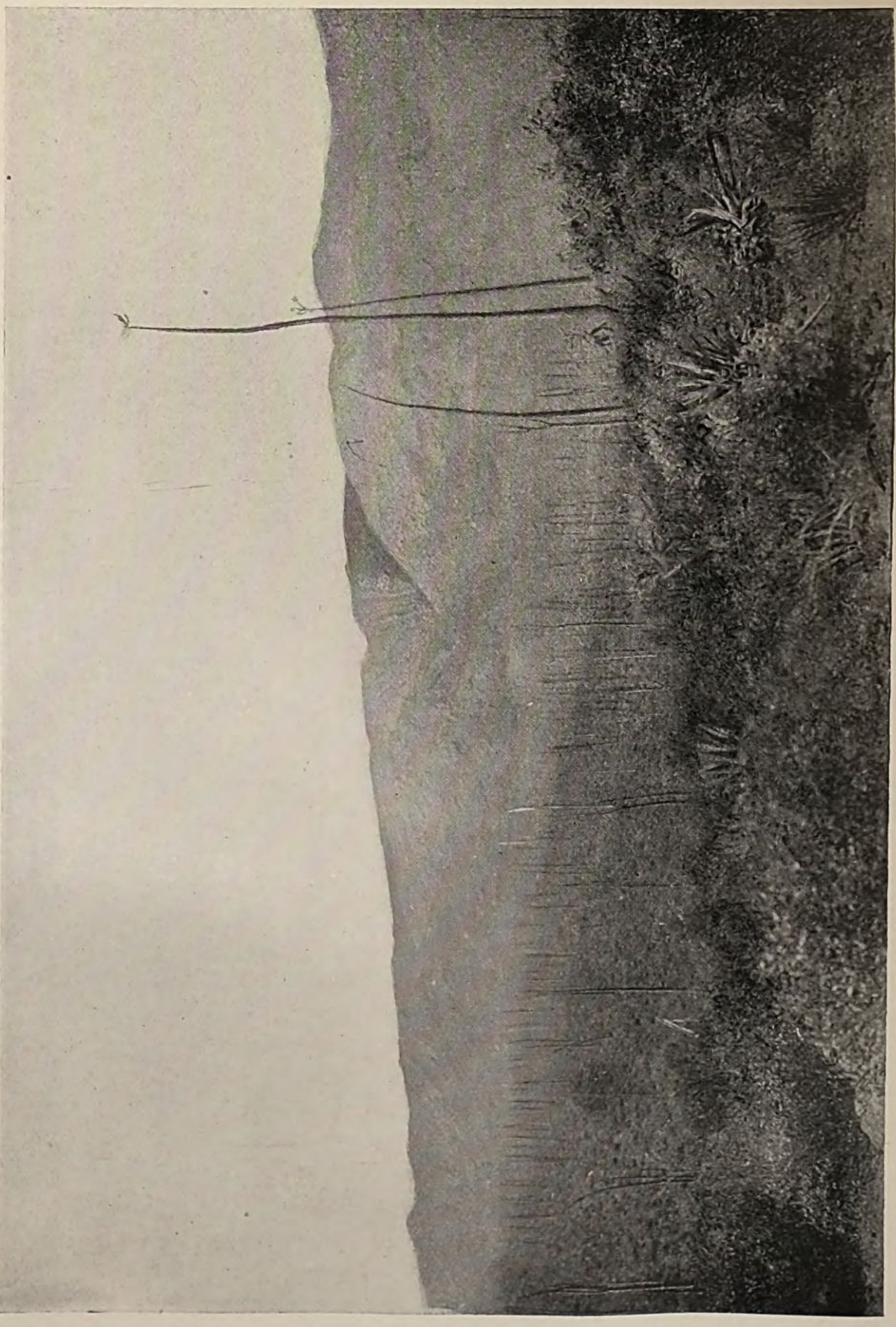
"Northward from Socorro River the bluffs of the mesa formation retreat gradually from the ocean, and at San Quentin are separated from it by the sandy plains of Santa Maria, about 8 miles wide and but a few feet above sea level, which are the northern continuation of the depressions of the bay of San Quentin. The immediate coast line at San Quentin is formed by a group of six conical hills of basalt, from 400 to 800 feet high, which, judging from the uneroded character of the lava flows which have issued from their flanks, must be of very recent eruption. One of these flows extending southward about 7 miles forms the low, narrow tongue of land known as Cape San Quentin. It is evidently the superior resistance of these hard lavas that has thus far protected the plains of Santa Maria from the encroachments of the sea.

WESTERN RANGE.

"In the present topography the western range is very ill defined, and consists of a number of irregular ridges and isolated mountain masses 15 to 20 miles from the coast, the highest summits of which are probably



VIEW AT EL ROSARIO, LOOKING WESTWARD ACROSS THE VALLEY. MESA SANDSTONES IN THE DISTANCE.



LOOKING SOUTHWEST TOWARD SAN FERNANDO, WHICH IS ON THE FARTHER SIDE OF THE RANGE.
The view shows upturned sedimentary beds in the middle distance.

less than 4,000 feet above sea level. Between the peaks are broad, transverse valleys and flat-topped ridges whose higher summits have the same general level with those of the higher plateaus of the mesa region—that is, about 2,000 feet. Rounded pebbles and an occasional fragment of recent shells were found on these summits, which strengthen the opinion that this was a pene-plain of recent times, probably formed at the time of the greatest submergence since the deposition of the mesa sandstones.

"The range was traversed on two lines—that of the arroyo of Santa Caterina, shown in the section [Plate 1], and that of the Rosario arroyo. The river bed or arroyo of San Fernando crosses it about midway between these two. Near the mission of San Fernando is a considerable development of sedimentary beds, one of which is a much altered bluish limestone containing unrecognizable fossils, which is probably either of early Mesozoic or Paleozoic age. [Plate 3.] The beds have a steep dip to the eastward; at one point are overturned against a considerable body of acid eruptives and diorite. On the line of the Rosario arroyo it consists mainly of diabase, with acid eruptives and diorites on their eastern flank. The latter cut the diabases, and are succeeded on the east by an extensive flow of rhyolite capping the mesa ridges which extend out into the interior valley. A little farther south diorites seem to form the main mass of the flat-topped ridges which here represent the range, and which are flanked on the east, at the border of the mesa region, by recent tufaceous rocks, in which is found one of the few springs of the region. Along the line of the section south of San Fernando, diorites again predominate, and in these occur deposits of copper sulphides, one of which has been quite extensively mined.

"It was not possible to determine the relative age of all the varieties of eruptive rock observed, but the older eruptives are evidently pre-Chico, while some of the recent eruptives are certainly more recent than the mesa sandstones.

"The rocks described above as acid eruptives are compact and sometimes brecciated quartz-porphyries of greenish and brownish colors, at times quite aphanitic, and again showing small phenocrysts of feldspar and more rarely quartz, sufficiently developed to be recognizable by the naked eye. Chemical tests in the more aphanitic varieties yield 70 to 75 per cent silica. The more common form of the diorite is a pinkish gray, finely granular rock, which in thin section shows a hypidiomorphic granular aggregate of quartz and triclinic feldspar with pale green hornblendes, in part or wholly altered to epidote. There are also a few sphenes and the usual iron ores.

"In the upper Santa Caterina Valley, which crosses the range diagonally in a nearly north-and-south direction, a very considerable mass of underlying granitic rock is exposed over an extent of about 10 miles along the bottom of the valley, which apparently grades into the finer-grained diorites surrounding it. Along the center of the valley a low ridge of rounded blocks of this very massive rock has the appearance

at first glance of a morainal ridge with huge erratics, but examination shows that the rounded forms are merely the results of weathering under the peculiar climatic conditions ot the region. The granite is an even-grained granular rock, thickly studded with small black scales of mica and small hornblendes. In thin section it shows a hypidiomorphic granular aggregation of quartz, feldspars, black mica, and deep green hornblende, with a sprinkling of iron ores, apatite, and rarely zircons. It resembles the granites of the Sierra Nevada.

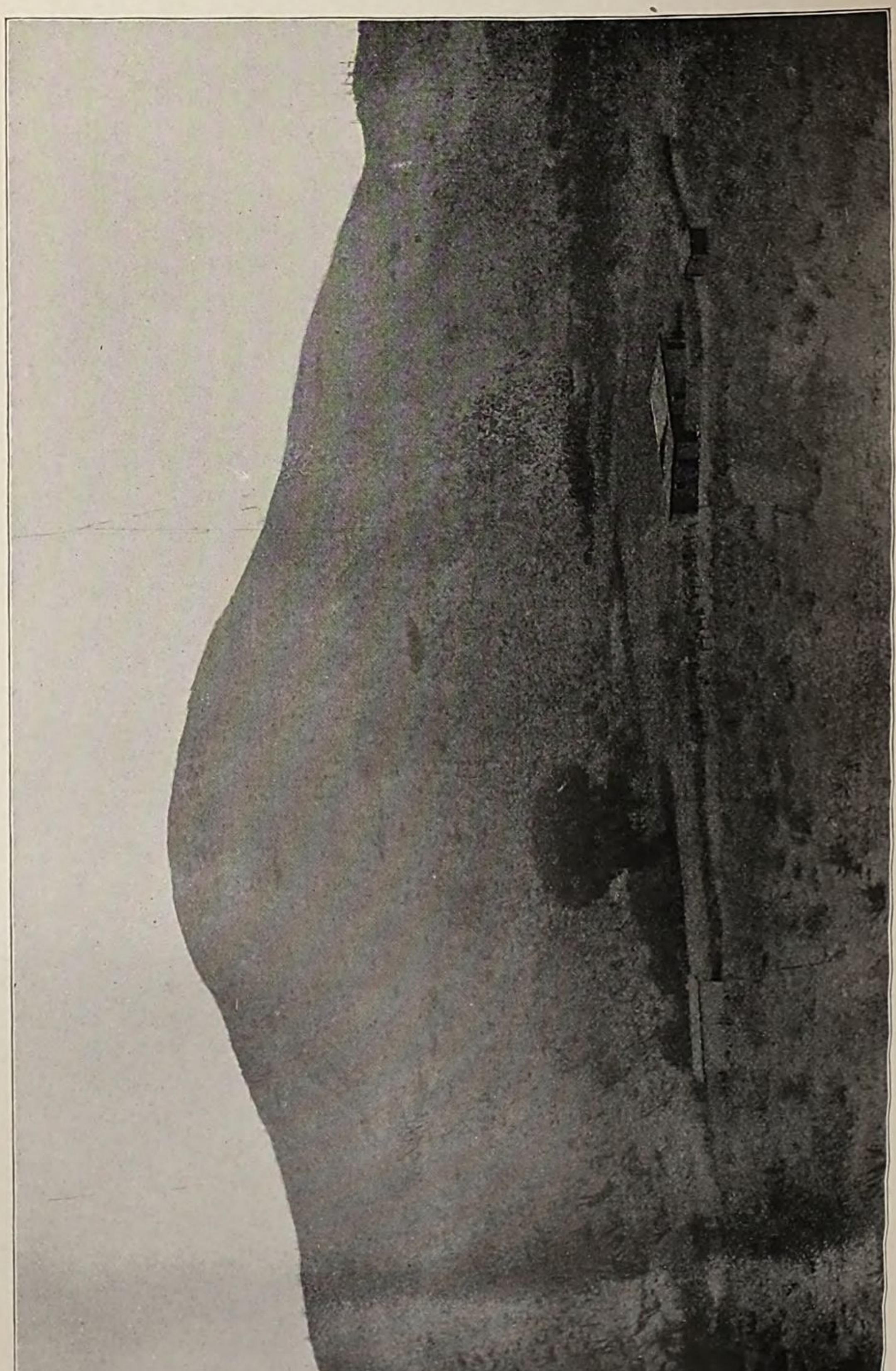
"Westward along the line of the section this granite is succeeded by the finer grained quartz-mica-diorite described above, and then by a belt several miles in width of recent eruptives, which form low rounded hills adjoing the mesa region. These appeared to be mostly rhyolites, and to have cut through the sedimentaries of the mesa region, though it was not possible to obtain unquestionable evidence of the latter fact.

"On the east, or at the head of the Santa Caterina Valley, capping the flat ridges which form the western divide of the interior valleys, was found a rather remarkable rock of the hypersthene-andesite type, showing microscopically small olivines and white feldspars, with occasional black hornblendes in a dark gray matrix. In thin section it shows a decided andesitic ground mass of augite and plagioclase microlites, with the usual iron ores and abundant colorless olivines, pale hypersthenes, small pale green augites, and an occasional dark basaltic hornblende with black border.

"Abundant chalcedony and flint concretions, with dendritic markings, constituting the popularly known moss agates, are found on the eastern slopes of these ridges.

INTERIOR VALLEY.

"The interior valley which was visited by the writers is probably that designated by Gabb as the plain of Buena Vista. In about latitude 30°, or a little north of the line of the section, its width on a northeast-southwest line, or at right angles to the trend of the peninsula, is over 15 miles, an almost level plain with a slight rise toward its eastern rim, which rests on the submerged flanks and crests of the eastern range. Its elevation varies from about 2,000 feet on the western to 2,300 feet on the eastern edge. To the southward its width is contracted by the encroachments of the bounding ranges which send out spurs or ridges into it, and in the far distance appear to merge together. The spurs from the eastern range are flat-topped in great part and composed of horizontally-bedded material, which, where examined, consisted largely of volcanic ash carrying abundant fragments of basic eruptives. These are evidently the mesa sandstones of Gabb. Those from the western range, on the other hand, are composed largely of eruptive rocks and appear to be projecting portions of the older mountains laid bare by erosion, but in a few cases are mesa-topped ridges, capped by horizontal lava flows of later age than the mesa sandstones.



SAN JUAN DE DIOS.

"To the north the valley appears to grow wider, and out of its midst rise a few conical peaks, the most prominent of which, known as San Juan de Dios [Plate 4], about 20 miles north of the line of the section, has a remarkably graceful outline and a probable elevation of over 4,000 feet. It is composed, in great measure, of eruptive rocks, among which felsite, diabase, liparite, and basalt were recognized, while erosion has disclosed on one side an underlying coarse quartzite. At its base is one of the rare springs of the region. Similar peaks are seen to rise out of the plain far to the northward at probable distances of 10 to 15 miles apart.

"The slope of the broad stream beds in the lower part of the valley is so imperceptible that the direction of its drainage is difficult to determine; but aneroid observations indicate that the portion examined is drained through the gap in the western range at the ruined mission of San Fernando (elevation about 1,800 feet), and thence probably by the San Fernando River bed to the Pacific Ocean. Limited portions of the eastern edge to the north of the line section are drained by deep and narrow arroyos of more recent formation into the Gulf of California. The present bottoms of the valleys are occupied by recent deposits of porous limestone or travertine and coarse conglomerate with calcareous cement containing rounded fragments of both eruptive and sedimentary rocks in great variety and varying size up to several feet in diameter. The evidence of wells which get water in the lower parts of the valley at 40 to 60 feet below the surface and of adjoining mesas in the valley, which afford partial sections, show a present thickness of little over 100 feet of these beds; but their elevation in shallow ravines—notably the one on the southeastern edge of the Buena Vista plain, in which are the New Pedrara onyx deposits, and remnants of calcareous conglomerates remaining on the flanks of the bounding ridges at other points—indicate that the original thickness of these deposits may have been several hundred feet, and that the greater part has already been removed by erosion. No fossil evidence was obtained as to their absolute geological age, but the character and position of the deposits indicate that they were laid down in an inclosed body of water, probably an interior lake of comparatively recent date. What remains of these beds barely serves to smooth over the inequalities of the underlying mountains, whose component rock masses often outcrop across the stream beds, especially along the eastern portion of the valley. Even where there is no actual outcrop the appearance of frequent fragments of granite or sedimentary rocks, as the case may be, indicate that these rocks are to be found in place near by and not far from the surface. In some cases the ground is whitened over considerable areas by the abundant small fragments of vein quartz, resulting from the disintegration of the underlying slates.

"The relative age of the interior lake beds may be assumed to bear some relation to that of the calcareous conglomerate already mentioned

which partially filled the earlier canyons of the Pacific Slope. After the deposition and subsequent elevation of the mesa sandstones, which are assumed to be of late Tertiary age, there must have been a long period of erosion, during which the interior valley was carved out and drained through the deeper canyons running to the Pacific Ocean. This was apparently followed by an extensive submergence of 2,000 feet or more, since which time the whole peninsula has been gradually rising by periodic movements, with considerable base leveling in the intervals.

"The present elevation of the mesa-topped ridges of the western range indicates a base leveling of the region at an elevation of about 2,000 feet above present sea level. This might have filled up all the outlets of the interior region across the western range and admitted of the inclosures of a body of water up to that level; but to account for the present position of the deposits on the eastern side of the valley, it is necessary to assume a subsequent differential movement by which that side has been raised a few hundred feet more than the eastern side."

EASTERN RANGE.

"The older or buried eastern range is made up of granite and gneiss, with highly altered sedimentary strata flanking it on the northeast, which stand either vertical or with a steep dip to the eastward and strike about northwest, or somewhat more to the west of north than the general trend of the peninsula. The present divide, on the other hand, follows the general trend of the coast line at a distance of 10 to 15 miles from it, and is marked in general by abrupt escarpments along the eastern edge of the desert plain.

"To the north of the limits of the field of observation, beyond the thirtieth parallel, the summits of the older range have been planned off and their depressions so evenly filled up by the more recent deposits that they play no part in the present topography of the country. To the south, however, where, east of the present divide, they have been denuded of the more recent deposits, or still farther south, where they were never completely covered by these deposits, they form conspicuous and striking topographical features, in marked contrast with the prevailing horizontal lines and broad shallow valleys of the western portion of the peninsula.

"In the northern region the desert plains and flat-topped ridges of mesa sandstones rise very gently from the west to the divide line, which almost invariably presents an abrupt escarpment to the east, overlooking a region deeply scored by narrow gorges several hundred feet in depth, with almost vertical walls. Here the divide line is marked by occasional isolated table topped buttes, capped by rhyolite, which rise 500 to 1,000 feet above the desert level and serve to mark the original level of the mesa sandstones, which have been protected from erosion by the cap of more enduring rock. These rhyolites are generally of

earlier date than the lake beds. The top of the mesa sandstones as thus determined is about 3,000 feet above present sea level, and their maximum observed thickness 800 feet. Augite andesite flows, apparently of more recent date, are found capping intermediate portions of the divide. The contrast in topographical structure between the region east and west of the divide is here less marked than in the region to the south, as on both sides approximately horizontal lines prevail. The surface of the mesa-topped ridges slopes upward toward it from either direction, but the slope is much greater on the eastern side and the ridges descend toward the gulf in a series of step-like terraces, while the whole eastern region is deeply scored by narrow, steep-sided ravines from a few hundred to a thousand feet in depth. The upturned beds of the metamorphic series are well exposed along the walls of these ravines, often reaching the surface of the intervening mesas. They are also seen in the shallow stream beds of the desert plains on the west, and, as already remarked, often outcrop through the thin covering of the lake beds for a considerable distance out on to the desert.

"South of the thirtieth parallel the summits of the buried range rise gradually, and east of the divide are completely denuded of any covering of recent beds that they may have had. They also spread out to the eastward, approaching more and more closely to the gulf coast, and south of the limits of the field of observation, or 20 miles south of the thirtieth parallel, they constitute a high granite range extending 10 or 15 miles westward into the interior valley and effectually cutting off any view of the country beyond.

"The region in the vicinity of the New Pedrara onyx deposits, a few miles south of the thirtieth parallel, shows well the general structure of the eastern range as presented in generalized form in the section on plate 1, and will hence be described in some detail.

"The principal onyx deposits are situated in a shallow ravine or eastern arm of the interior valley, between two ridges of mesa sandstone, at an elevation of about 2,300 feet. Since the denudation of the granite bed of this ravine of its former covering of mesa sandstone it has been filled to a depth of about 100 feet by alternate beds of travertine and calcareous conglomerate, which were probably contemporaneous and at one time continuous with the lake beds of the interior valley.

"The winding bed of the modern stream cuts into the travertine deposit, exposing at one place a cliff of over 20 feet in height, showing three distinct layers of "Mexican onyx," one of which is over 3 feet thick, interstratified with the travertine, while for a distance of nearly a mile down the ravine sheets of the more resisting onyx cap the little travertine mesas on either side. The occurrence of the onyx, which is a thermal spring and surface deposit in successive layers, separated by travertine and resting on conglomerate, indicates a probable successive rise and fall of the waters of the lake where the travertine was deposited, which would have admitted of some slight erosion of the deposit in

the periods when the lake waters had temporarily retreated—a hypothesis that was confirmed by the finding of some fragments of onyx in the upper travertine beds.

"At the head of the ravine the travertine beds end abruptly in an escarpment, beyond which one descends rapidly 500 feet through winding ravines, between sharp, jagged ridges of a metamorphic rock, to the bed of the Tule arroyo, a winding, V-shaped gorge which runs northward about 10 miles, then northeastward to the Gulf of California, draining the whole region east of the divide. At one point this gorge widens out into quite a valley, in which are travertine deposits about 50 feet in thickness, with layers of onyx in the upper part. Relics of the thermal action are found at the present day in a little effervescent spring, known as the Volcan, which issues from the top of a dome-shaped mound of calcareous tufa in the narrow bottom of the ravine before it opens out into the valley containing the travertine deposits. [See Plate 5.]

"These travertine deposits are entirely isolated and have no present connection with those of the interior valley to the east of the divide, their level being about 400 feet lower than the divide, where the nearest lake-bed deposits end. The similarity of their composition, their relations to the underlying rocks, to the onyx formation, and to modern erosion, all suggest, however, a common origin with the lake beds, and if once connected with them there must have been a differential movement since their deposition which produced the present difference of level.

"Beyond the Tule arroyo to the eastward arise a series of sharp, jagged peaks which attain a maximum elevation of about 3,000 feet, deeply scored by a most intricate system of deep, winding ravines, quite impassable except to foot travelers, and which are in most striking topographical contrast to the level valleys and plains of the region west of the divide. Within these hills at various points are placers from which the Mexicans obtain considerable coarse gold by dry washing during the months immediately following the spring rains. At other seasons there is not enough water to support life. They are composed of distinctly stratified sedimentary beds standing on edge and striking northwest and southeast, but which are so highly metamorphosed and so blackened and splintered by the weathering of this arid region that their original character can no longer be determined. They are mostly dark siliceous slates and fine-grained mica-schists. Some beds have all the external appearance of limestones in their granular structure and thin white veins, but their present composition shows no trace of lime and is almost entirely siliceous. They are traversed by well-defined dikes, which are also intensely altered.

"Among the more striking rocks in this metamorphic series, at the northern limits of the area observed, was a fine-grained hornblende rock which microscopic examination shows to be properly an altered dio-

THE TULE ARROYO, WITH RECENT DEPOSITS OF CALC TUFA.

rite. The ground mass consists of an aggregate of plagioclase feldspar, apparently anorthite, with fibrous hornblende containing inclusions suggestive of interpolations of hypersthene and diallage. Associated with this was a grayish massive rock thickly studded with short, stout crystals of black hornblende 2 to 5 millimeters in diameter and 5 to 8 millimeters in length. Microscopical examinations show the ground mass to be a granular aggregate of almost colorless augites with a few plagioclase feldspars, and the rock apparently belongs to the group of hornblende-pyroxenites of Williams. When collected, these rocks were supposed to be interstratified with the metamorphic series, as their outcrops had the same general strike; the result of microscopical examination indicates that they are probably altered intrusive sheets.

"The flat-topped ridge of mesa sandstones south of the ravine in which the principal New Pedrara onyx deposits occur is thickly strewn with subangular blocks of augite-andesite, which have apparently weathered out as the soft ash of which the beds are composed has worn away. At the eastern extremity of this ridge, on the very crest of the divide, is a high basalt-capped mesa, nearly a mile in diameter, called by us Bluff Point. It has an elevation of about 3,500 feet, and overtops all the highest summits within a radius of 15 to 20 miles, thus offering an admirable point of view from which to study the physical structure of the region. The basalt cap has an aggregate thickness of 500 feet, and consists of an upper layer of dark vesicular olivine-bearing rock 350 feet in thickness resting on 150 feet of gray, fine-grained rock containing abundant large crystals of olivine. The upper layer has a dark smoky glass base with the usual microlites of feldspar and augite and small phenocrysts of augite, olivine, and feldspar. Between these flows a zone of decomposition several feet in thickness, colored brilliant red by peroxidation of the iron, makes a prominent line, visible from a great distance, on the bluff faces which almost completely surround the mesa.

"The surface of the mesa has a gentle slope westward and ends to the eastward in an almost perpendicular escarpment overlooking the Tule arroyo 1,500 feet below, which has here widened out into a considerable valley that drains the northern slopes of the White range far to the south. Beyond this valley, partly cutting off the view of the Gulf of California, lies the group of dark rugged peaks of metamorphic slates called the Volcan Peak group, which the Tule arroyo almost completely encircles in its circuitous course to the sea. Through the gaps in this range can be distinguished the pale blue waters of the Gulf of California and occasionally portions of the coast line, as well as several of the group of small islands which lie a few miles off the shore in this latitude, and whose abrupt outlines show them to be probably projecting points of the buried metamorphic ranges.

"The arms of the interior valley, which lie to the south and west of the Bluff Point mesa, have a floor of granite which is entirely denuded

of the mesa sandstone covering and of the lake beds, if the latter ever covered it. The granite is a light gray rock of normal type, consisting of two feldspars, quartz, and both white and brown mica. Hornblende was not observed. From general appearance and association it would appear to be a distinct and older rock than that found in the western range. To the south of these valleys the White range, composed of the same granite, stretches some 10 or 15 miles east and west across the peninsula, and apparently cuts off in great measure the interior valley in this direction. As no contacts were found, it was impossible to determine the relative age of the granite and the metamorphic series."

ITINERARY.

The party left San Quentin for El Rosario, some 40 miles to the south, late on the afternoon of July 19, our conveyance consisting of a "dead ex" wagon drawn by a pair of mules. That night we succeeded in making but about 7 to 9 miles, nearly the entire distance being over level sand plains, either quite bare or covered with cacti, sage brush, and in places with dense growths of strong-smelling shrubs with small harsh leaves and thorny branches. We encamped that night, as indeed every night, in the open air, and were on the road again by 6 o'clock the morning following. For nearly 10 miles the route lay along the hard sands of a beautiful beach facing the open Pacific. Thousands upon thousands of dark-colored sea fowl flew back and forth in long undulating lines, while small flocks of gulls, curlews, and an occasional brace of strong-flying pelicans enlivened the monotony of the trip. The sands were beautifully hard, clean, and white, with comparatively few shells or other indications of marine life. The disk-like shells of echinoderms, an occasional giant clam, and more rarely yet a few abalones were the most conspicuous forms. But this part of the trip was only too soon at an end, and leaving the beach we turned inland, journeying for the rest of the day over a nearly level plain with high mesa sands to the east. In the distance from San Quentin to El Rosario fresh water was found but twice, and though in some cases the soil was good the lack of moisture leaves the country essentially a desert. This indeed is the condition of affairs throughout the entire region traversed, excepting where along the few streams a crude form of irrigation by the native Mexicans was carried on. Along the beach above alluded to the soils were light and sandy and bore no vegetation of sufficient size or proper foliage for casting a shade. Such plants as existed consisted mainly of cacti and small, nearly leafless, thorny shrubs. Rarely the pole-like form of a giant cactus or an agave appeared in the distance, but much more abundant were elongated, serpent-like forms, 3 or 4 inches in diameter and of all lengths up to 10 or more feet, growing singly or in clusters.

A miserable variety of sage brush, with its half dead, half living, scrawny branches, was everywhere, while an occasional small, tubular-

shaped, very pretty pink flower showed up in strong contrast with the general dreariness of the land. An "ice plant," an insignificant little thing growing close to the soil, of a green and wine red color, covered all over with jelly-like drops or tubercles, added also a slight amount of attractiveness, or at least gave interest to the scene. Small lizards darted about, and an occasional quail, jack or cotton-tail rabbit, a few butterflies, a large species of ichneumon fly, a few grasshoppers (some species of Œdipoda), and a black yellow-spotted spider which builds strong webs on the shrubs, were about all that was visible in the way of animal and insect life, though in the soil, at the foot of the shrubs, I found occasional empty spiral shells of a land mollusk, the *Helix stearnsiana* of Gabb. After leaving San Quentin nothing whatever in the way of reptile life was seen, although immediately about San Quentin a species of rattlesnake was said to be quite abundant. Beyond Rosario, with the exception of quail and mountain sheep and antelope well over to the east coast, no forms whatever of wild animals were observed, and even the numerous burrows of small nocturnal mammals, so abundant toward the north, were almost entirely lacking. About dusk we reached the divide which marks the limit of the desert here, and went rattling down the steep sandy slopes toward El Rosario mission and the sluggish shallow stream of the same name, but dignified in this country of arid wastes by the name of river.

We reached the bottom just about that hour when it is too dark to see anything distinctly, to find a flat valley, perhaps a mile in width, hedged in on either side by steep bluffs of bare friable sandstone, and covered, where not cultivated, by a dense growth of greenish, pungent-smelling, almost leafless shrubs and a few willows. The short twilight came quickly to an end and left us lost, stuck in the sand in a dense growth of brush, from whence we were finally extricated through the aid of a Mexican, and about 9.30 p. m. found our way to an adobe hut, where we spent the night.

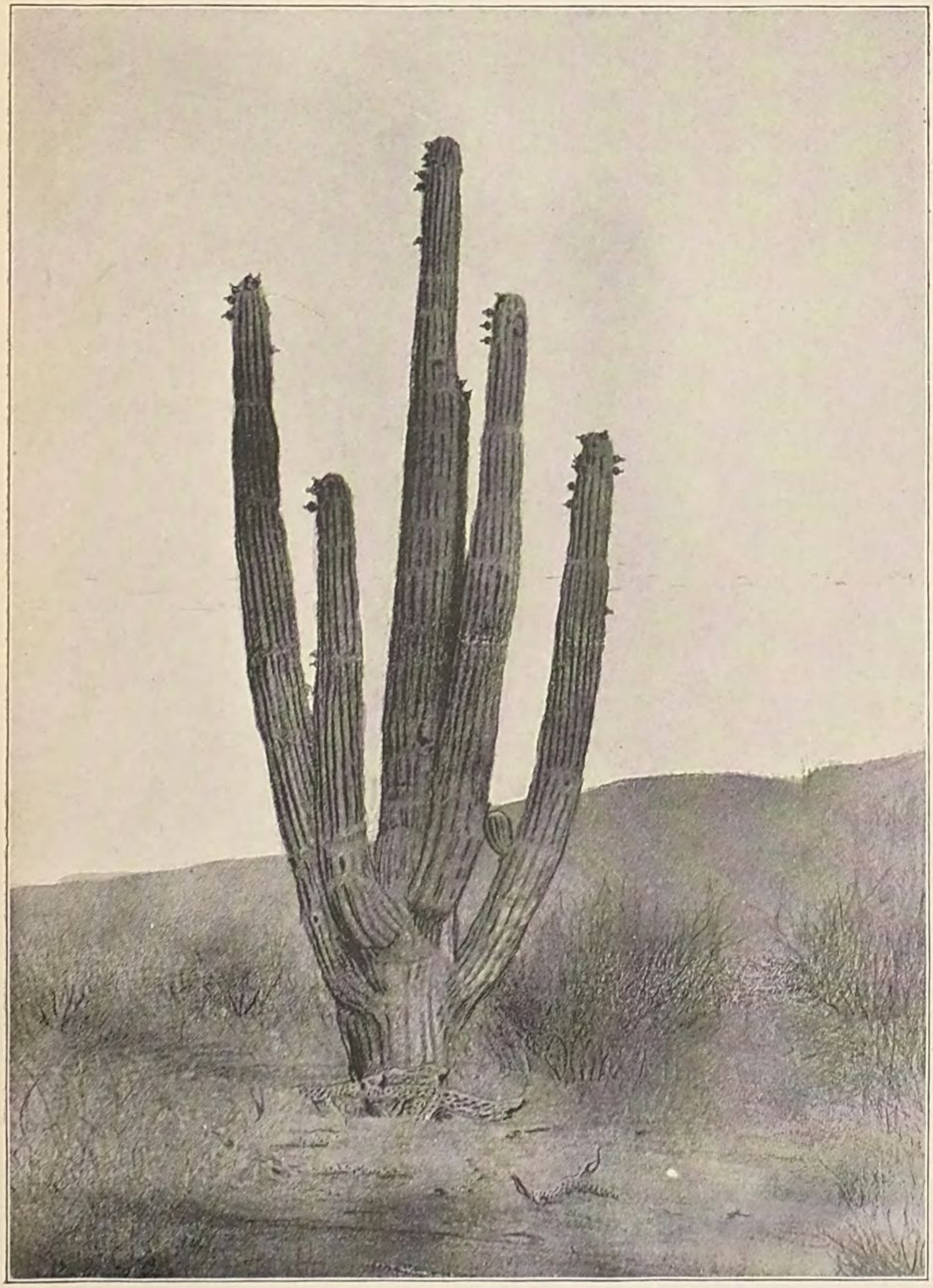
Five o'clock the following morning, July 21, found us once more astir. While the head of the party was making arrangements for pack and saddle animals, I improved the opportunity to utilize notebook and camera. El Rosario (Plate 2) consists of a few adobe huts scattered for a mile or more along the nearly level plains bordering on the river. From a historical standpoint its most interesting possession is the ruin of an old Franciscan mission, such as were once so abundant throughout the Mexican-Spanish possessions on this coast. The original buildings are now almost entirely obliterated, only portions of the thick, massive adobe walls remaining standing. A small building of modern construction now contains the altar, crude images of the saints which resemble nothing more than grotesquely large wooden dolls, and ancient vestments, such as have escaped destruction. Two bells, each about 20 inches in height, are hung upon a T-shaped post made from the knees and other timbers of a wrecked vessel. One of these bells

bears the date of 1784 and the other 1800. A few miles up the river we saw in the distance ruins of an extensive series of buildings once forming a part of the mission, but now given over to silence and the basking lizard. In exploring these ruins and still others at San Fernando, one could not but be impressed with the fact that, objectionable as may have been the system from a purely political standpoint, as a means of bettering the immediate condition of the people it was certainly preferable to anything since inaugurated. In the place of the thriving villages of no mean size which here and there dotted the land wherever was sufficient water for irrigation, of well-kept adobe houses and churches, vineyards, orchards of figs and peaches, of gardens and fields of grain, are now scattering huts in midst of ill-kept gardens or barren plains. Shiftlessness, squalor, desolation, and barrenness now reign supreme, where once was thrift and apparent prosperity.

The buildings at El Rosario are, I believe, without exception, of adobe—one-story affairs with thick walls and roofs of poles thatched with straw or palm leaves, and with floors of stone or hard-trodden dirt. The schoolroom of the village was built of poles standing against the side of one of the adobe houses, and rudely interwoven with sugar cane. In this I found a dozen or so little bright-eyed Mexicans under the instruction of a male teacher whose years must have numbered at least 60. During school hours each scholar studies aloud, and the confusion produced can be imagined. Now one voice in its jabbering monotone would prevail; and now another, now louder, now softer, rising and falling in irregular cadences such as would shortly render an Eastern teacher insane, but in the midst of all of which the Mexican conducts his recitations and administers his punishments, corporeal and otherwise, with a calmness and indifference that led me at times to doubt his power of hearing at all. All about the houses is dirt and sand; no lawns, walks, or roadways. In the yard, inclosed by adobe walls and thorny poles of the fouquiera, were stretched lines, on which are drying long strips of meat. On the flat below ran the irrigating ditches, where women were washing clothes, and which are bordered with fine large fig trees full of ripe, purple fruit, and beyond which are peach orchards and gardens.

Shortly after noon of the 21st our outfit was declared ready and we mount and start, said outfit consisting of three horses, two mules, and one burro for saddle purposes, and two pack mules to carry provisions and camp utensils. The first 10 miles of our course lay due north up the Rosario Valley, the river bed becoming shortly little else than a dry ravine, with here and there an adobe house with the usual type of occupants.

At the end of perhaps 10 miles we turned to the east up a lateral canyon or arroyo toward the mountain range, at the foot of which, by the side of a diminutive muddy spring, we made our camp. The stream, now dry, here enters a deep, steep-walled canyon, cut in granitic dio-



GIANT CACTUS (*Cereus pringlei*).

FOUQUIERA COLUMNARIS.

rite, which seems to form the main mass of the hills, though in the dry stream bed are abundant bowlders of granite, diabase, and more rarely liparite and andesite.

The next morning it was found that our animals, which had been merely hobbled in order that they might browse on the mesquite, had strayed so far that it was nearly 11 o'clock before we were once more in the saddle. In the meantime, while engaged in pursuit of the animals, the camera was more than once brought into requisition, some of the results being here reproduced in Plates 6 and 7. The giant cactus, *Cereus pringlei*, Plate 6, is about 25 feet in height by 20 inches in diameter at the butt.

Larger forms, perhaps 35 to 40 feet in height, occur, but this was selected for photographing simply on account of its accessibility and from its being in fruit, as shown in the knob-like excrescences near the top. This fruit consists of a beautiful dark carmine pulp, with black seeds, inclosed in an envelope or rind so beset with small needle-like thorns that he who plucks needs fingers of brass. The appearance of this pulp in that dry, hot region was tempting in the extreme, but the realization disappointing, it being almost tasteless, and even failing to quench the thirst. These awkward forms, resembling nothing more than clustered mill logs standing on end, were quite abundant, though widely scattered. Some were straight and limbless as saw logs; others gave off three or four or more clumsy branches a few feet from the ground, as shown in the illustration.

Another striking form seen here for the first time is the *Fouquiera columnaris* shown in Plate 7, and which becomes more abundant on the inland plateau. Although in greater dimensions, some 40 feet in height and 15 to 18 inches in diameter at the base, these strange forms were readily cut down with the back of my geological hammer, and showed in cross section a structure not greatly unlike that of our ordinary Eastern sunflower (*Helianthus annuus* Linnæus) in that they have a thin exterior or rind of a greenish white color and an interior core of white pith-like material.

The numerous branches, which are about the size of an ordinary lead pencil, pass directly through the hard, woody rind into the pith. When the plant dies, the limbs fall out, the pith shrinks away and decays, leaving the trunks in the form of collapsed elongated cylinders full of spirally-arranged perforations. These branches are very abundant, and project uniformly in every direction, sometimes to a distance of 2 feet or more. They are stiff, harsh, and thorny, and it was found possible to gain access to the trunk without seriously tearing the flesh only by turning up one's coat collar, putting on gloves, bowing the head, and backing in. Even then the work of cutting through the bark is disagreeable, though the bark or rind is itself thin and tender.

A landscape of these pole-like forms, with their thorny branches and few small, brittle, thick, yellow green leaves is weird in the extreme,

and particularly so about dusk. Dry, hot, leafless, noiseless, and apparently lifeless, it conveys vividly to the imagination the idea of a burnt-out world. (See Plates 3 and 8.)

The writer is informed by Chief Botanist F. V. Coville, of the Department of Agriculture, that this plant was first described by Dr. Albert Kellogg nearly forty years ago, under the name of *Idria columnaris*,[1] a new species of the family Fouquieraceæ, the description being based on specimens brought from Lower California by Doctor J. A. Veatch. The validity of the species was afterwards questioned and the plant doubtfully referred to *Fouquiera spinosa*, until in 1889 Mr. T. S. Brandegee fully established its distinctness from that species.[2]

As we ascended the mountains and passed the crest to the plateau on the east, the country became, if possible, more and more forbidding. The scanty soil and scattering growth of desert plants quite fail to cover the rocks, which stand out bare and hot, weathered to a dull reddish color. There is absolutely nothing that can cast a shade or boast a thornless leaf. Yet there were beautiful and interesting things, if one could but stop under that scorching sun, to admire. A barrel-shaped cactus from 6 inches to 4 feet in height, with long strong sharply recurved thorns, shows delicate green and pink tints, and often has a circle of beautiful deep scarlet flowers on the top. The agave begins to appear; a little insignificant cluster of leaves growing on vertical cliffs takes the form of a rose, and is coated with a flour-like bloom. The tints are delicate greenish white, sometimes pinkish, and when one can rid himself of the idea that the whole country is accursed, he finds it beautiful in the extreme.

We camped that night (the 22d) on the banks of a stream no longer running, but yielding in standing pools sufficient water for our immediate needs, passing on the way the only habitation seen between Rosario and San Juan de Dios. Mesquite grew abundantly along the dry bottoms, and there was a plentiful supply of quail, but no other forms of animal life were seen. From this point to San Juan de Dios the most striking feature of the landscape are the rounded, boss-like forms of the hills, due to the weathering of the granular, massive diabases and diorites of which they are composed. The region is one of limited rainfall, but subject to great diurnal changes of temperature. The agents of disintegration are therefore heat and cold, and as a result the débris from the massive eruptive rocks consists mainly of angular fragments, each of the larger fragments consisting of an aggregate of minerals, scarcely at all discolored by oxidation, and differing from the parent rock only in their state of partial disaggregation. This gravel and sand, disturbed but little by other than wind erosion, accumulates on the slopes until the outcrops become largely buried in their own débris and partake of the rounded character noted above. During the

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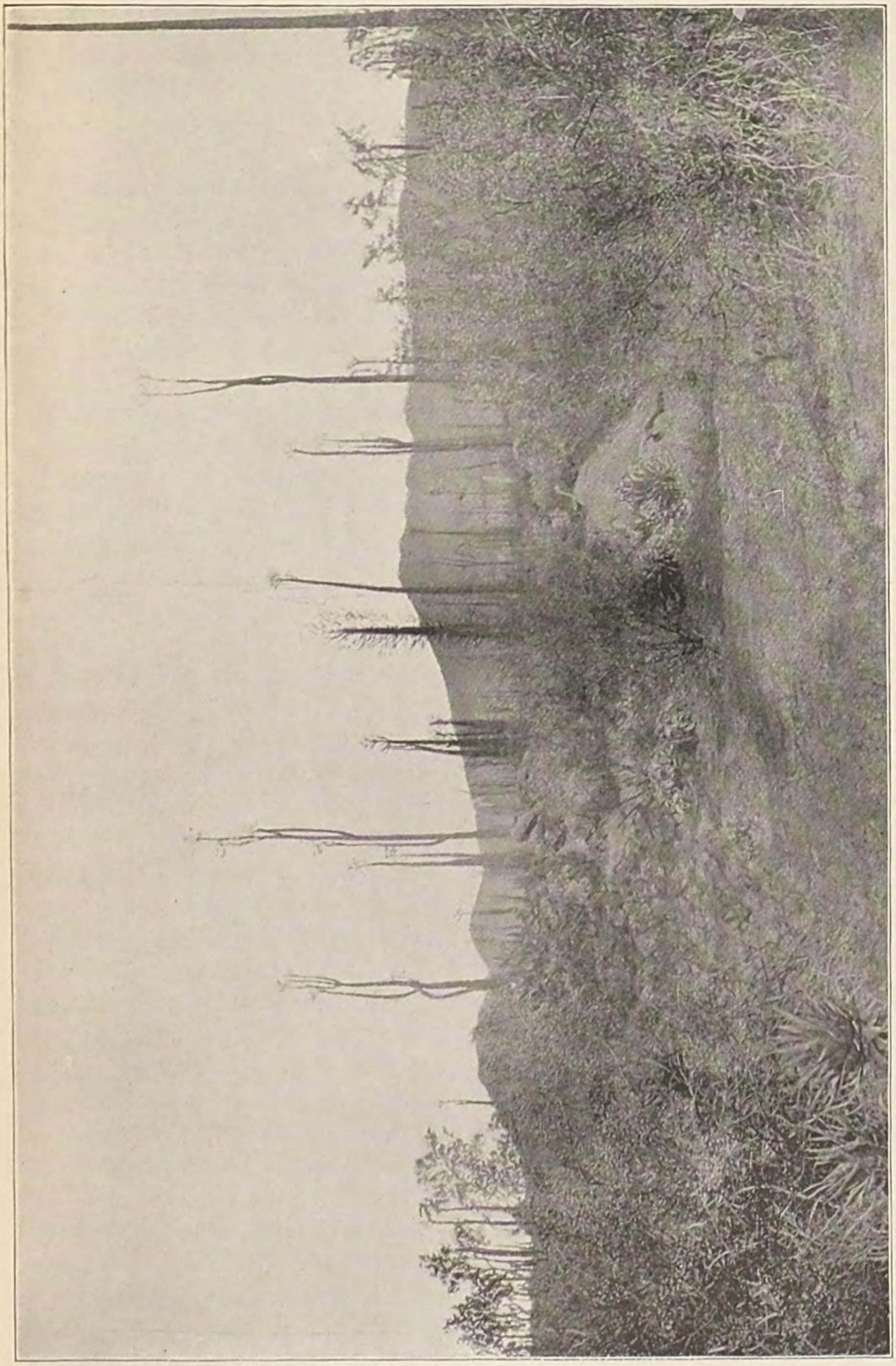
[1] Proc. Cal. Acad., II, 1859–60.

[2] Proc. Cal. Acad., 2 ser., II, 1889.



CHARACTERISTIC LANDSCAPE, INTERIOR OF PLATEAU, SHOWING POLE-LIKE FORMS OF FOUQUIERA COLUMNARIS AND OTHER DESERT VEGETATION.

day we passed over the landscape shown in Plate 8 and crossed a low divide, where the "lost mountain" type of structure, already described, became first evident. The ground was covered with angular and sharply-rounded pebbles of acid and basic eruptive rocks, interspersed with thin crusts of lime carbonate, indicative of lake-bed deposits. A small outcrop of hard, compact, reddish quartzite was passed a few miles before San Juan de Dios, which place we reached about 3 p. m. on the 23d.

A little stream makes up out of the rocks in a canyon, flows a short distance, and sinks in the sand. Yet 'tis enough for human needs, and here in his adobe hut, thatched with palm leaves, lives a Mexican raising cattle and children (Plate 4). We are given a hearty welcome, and fed bountifully on stewed quail, beans, skim milk cheese, wild honey, and the leathery tortilla, made from corn crushed on the aboriginal metati.

The landscape here, except in the creek bottoms, retains its general desert aspects. The flora is composed of various species of cactus, among which the log-like cereus already mentioned is conspicuous. The Fouquiera and agave also abound. The large tree shown is a cottonwood, which I learned was not indigenous, but brought when a mere slip from San Diego, California.

The hill shown is composed at its base of compact brecciated quartz porphyry and diorite, capped by a light porous liparite. Small outcrops of black basalt occur well up the slopes, which are covered by bowlders rounded and waterworn of liparite and andesite.

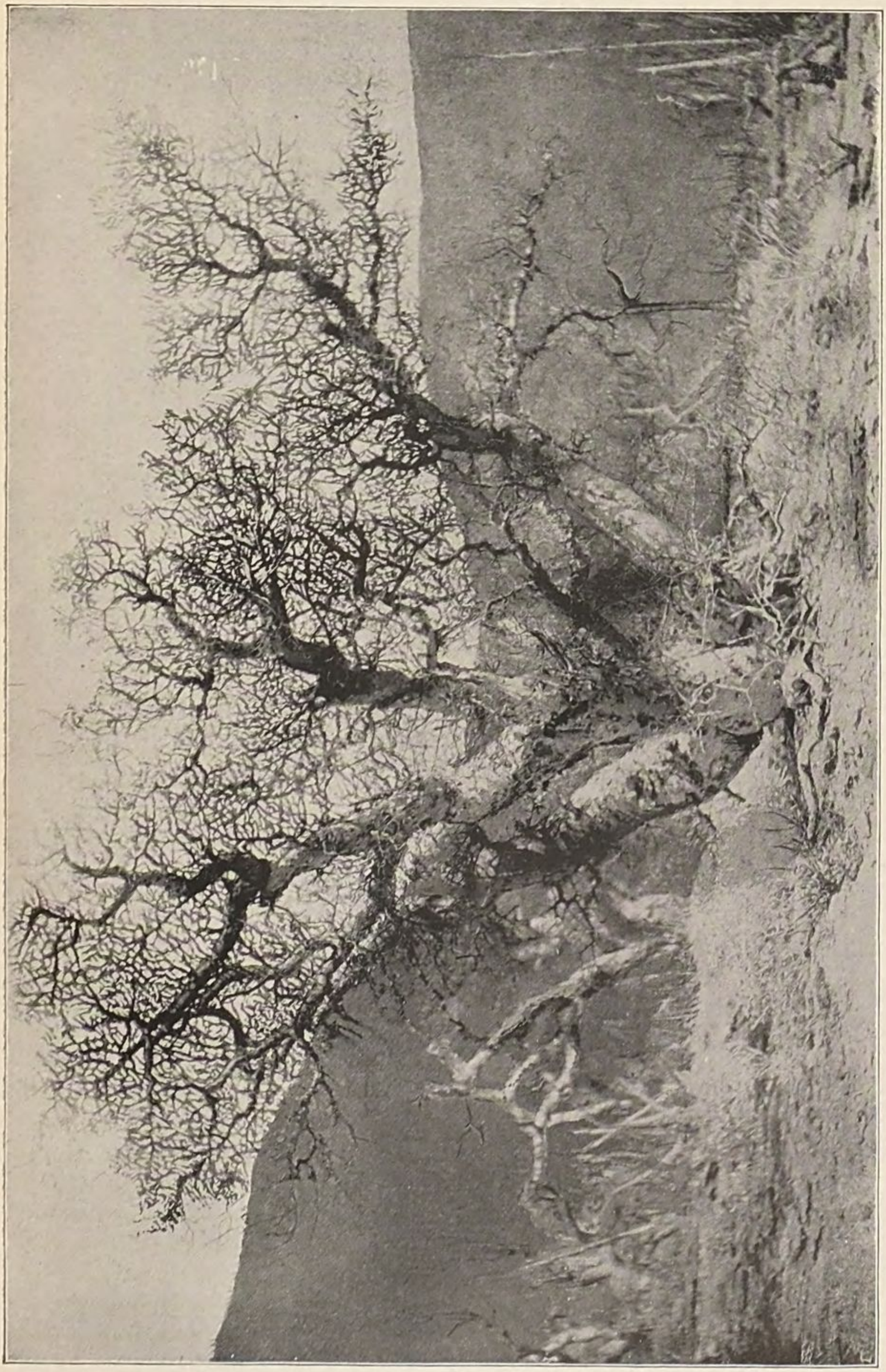
The following morning (July 24) a general round-up was held, and new animals obtained as far as possible, those obtained at Rosario being already footsore. As the distance to the next water was estimated at from 35 to 40 miles—a distance far too great for one day, over rough trails and with unshod animals—it was decided to delay our start until about noon, making a dry camp at night and finishing the trip the day following. This was the programme finally carried out.

The first few miles of the route lay upward through narrow canyons with steep, precipitous walls and loose, rocky bottoms, the slopes being covered with bowlders of liparite, and the country rock consisting of a loosely consolidated and irregularly bedded coarse gravel and bowlder aggregate cemented by fine sand. Finally, emerging from the canyon, or arroyo, we found ourselves on a high, level, liparite-topped plateau, which extends for miles in a northerly and westerly direction. The *Agave shawii*, with central stalk 10 to 15 feet in height, stand here by the tens of thousands in full bloom in the midst of piles of rocks so hot and forbidding that in spite of myself I drive by with scarcely a look. These continue abundant well over toward the east coast and are often beautifully symmetrical. For years these plants gather from the stingy soil the necessary nutriment for the flower stalk, storing it up in their thick, fleshy, bayonet-like leaves. When the season finally arrives,

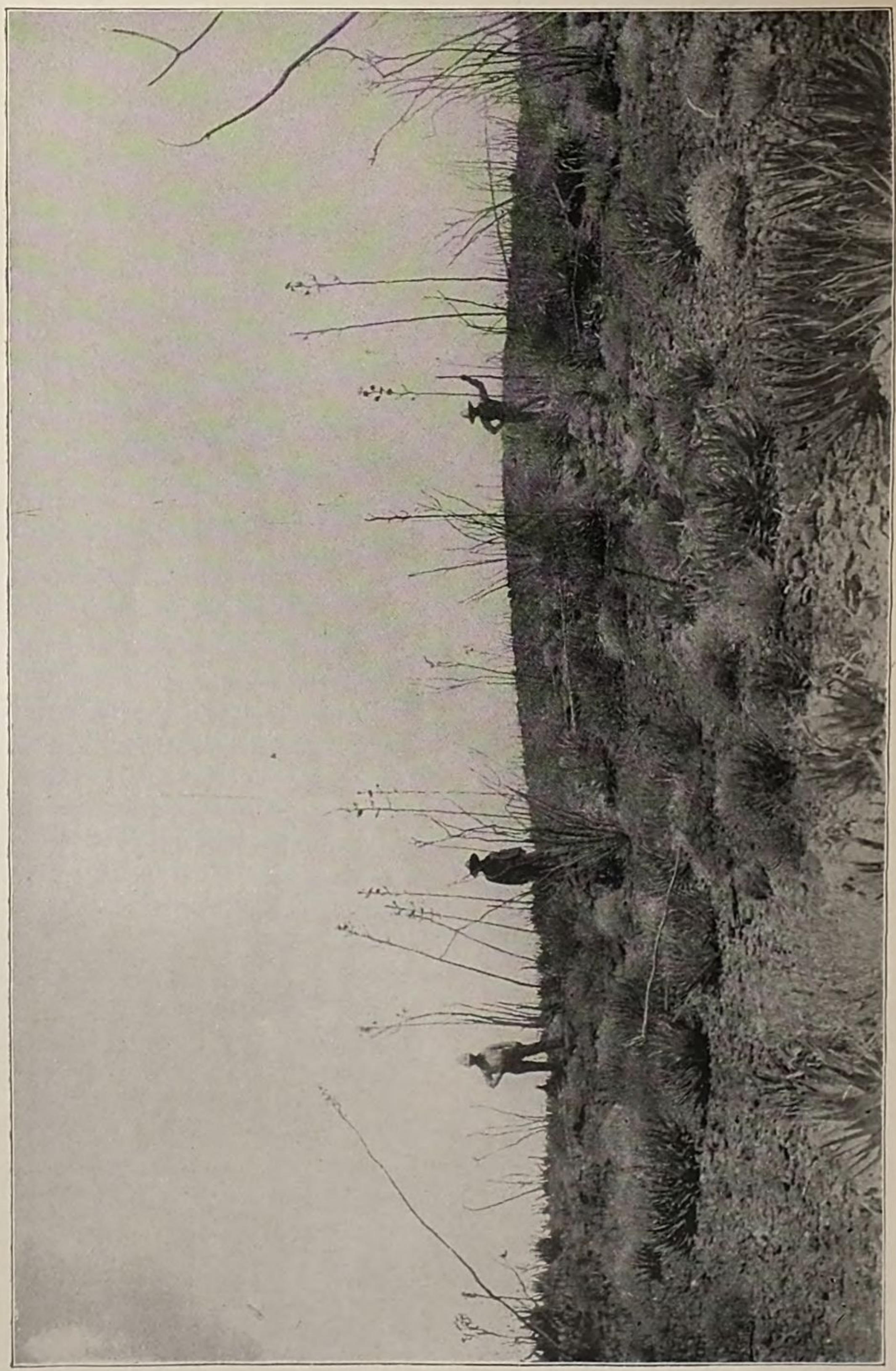
they shoot up in a surprisingly short space of time a single stalk, sometimes 10 feet in height and 4 inches in diameter at the base, bearing at the top a raceme of honey yellow, trumpet-shaped flowers. As the stalk shoots upward the leaves yield to it their stored-up juices, shrivel, and die. Thousands of these were passed during the day, in all stages of youth, maturity, and old age.

Continuing in a general easterly direction we soon reached the limit of the plateau and plunged, by means of steep and often dangerous trails, abruptly down several hundred feet where, for a distance of 20 miles or more, we traversed an undulating plain covered with sand and loose bowlders, some rounded and others sharply angular, with lake-bed exposures wherever the now dry water courses were cut to a sufficient depth. The few antelope seen at a distance were the only signs of animal life noted during the day. We camped that night (the 24th) in the sand of a dry, shallow water course, resuming our journey at 3.30 the next morning. Sharply-serrated mountain peaks, suggestive of volcanic cones, were seen in the distance, and about noon our plain ends in a precipitous canyon cutting across heavy bedded, dense, blue gray quartzites, which so strongly resemble limestones as to cause them to be mistaken for this rock until they came to be tested in the laboratory. In addition to this quarzite is a finely fissile, nearly black, mica-schist, both rocks standing nearly on edge and with a strike some 20° west of north and south. A dike of brecciated felsitic rock was also noted. As the disintegration here, as farther to the west, is mainly due to temperature changes, the schistose rocks weather into splintery forms and the general topographic features may be described as ragged in the extreme. The drainage from this point is toward the gulf, through ravines, arroyos, and canyons innumerable.

We find water and make our camp on the afternoon of the 25th in what is locally known as the Tule Arroyo, some 15 miles from the gulf coast. Two insignificant little springs bubble up here in the dry bed of the stream, furnishing, when first gathered, a pleasant sparkling fluid so highly charged with carbonic acid as to resemble the soda water of the drug stores. On standing, however, it soon lost its effervescent property and became so stale as to impart a decidedly disagreeable taste even to the coffee. Our first meal here consisted of stewed potatoes and dark heavy Mexican bread, as tough and indigestible as so much dried putty. Fortunately for us our Mexican guide went down the arroyo toward the gulf and returned before night with the carcasses of two mountain sheep, which kept us supplied with meat for the remainder of the trip, the atmosphere being so dry that there was no difficulty whatever in preserving it. The heat of the arroyo during the day was intense. The high walls on either hand afforded shade during the early morning and late afternoon, but during the middle portion of the day life was only rendered tolerable to those who stayed in camp by lying at full length in the sand under an immense mass of rock that had fallen from the cliffs above.



ELEPHANT WOOD (*Veatchia cedrocensis*).



CHARACTERISTIC LANDSCAPE ON EASTERN SIDE OF PENINSULA NEAR THE TULE ARROYO.

The prevailing plants are the *Agave Shawii* and *Fouquiera splendens*.

Aside from the "tule," a flag which, from the shape of its leaf and the characteristic cylindrical spikelike form of its blossom and fruit, was assumed to be the common "cat tail" (*Typha latifolia*) of the Eastern States, and clusters of rushes, shown in the foreground of Plate 5, in the bottom of the arroyo, there were on the slopes above numerous cacti, one or more species of Spanish bayonet, the *Fouquiera splendens*, and numerous agaves. The most striking of the floral forms, and one which was seen here and only here, was the peculiar dwarf-like *Veatchia cedrocensis*, or elephant wood (Plate 9). These were rarely more than 10 feet in height, though sometimes a foot or more in diameter at the butt, and widely branching. Some of the smaller forms, but a foot or so in height, enlarged abruptly into bulb-like forms, 3 or 4 inches in diameter, on the immediate surface of the ground. The leaves and yellow blossoms are small and inconspicuous, and scarcely show at all in the rather poor photograph from which the accompanying engraving was made.

The water from the springs above mentioned flows into depressions in the rocky basin, forming pools, in which were found numerous water beetles and one hemiptera, similar, so far as the writer could judge, to the backswimming water boatman (*Notonecta*) of the Eastern ponds. The water itself is sufficiently charged with carbonate of lime to deposit a sinter on the surface over which it flows. During an earlier history these springs, issuing from near-by vents, have built up large dome-shaped masses of sinter, as shown in the left middle back group of Plate 5. Before the arroyo was cut to its present depth, springs were evidently more numerous, and tufa or travertine deposits of considerable extent are found upon the adjoining slopes. A large portion of this material is of a dull brownish gray color, slightly compacted, cellular, and of only geological interest. Occasional patches occur, however, of the same material of a white color, or beautifully tinted and veined with green and rose, and so compact as to acquire, in the hands of a workman, a surface and polish like glass. It is, in short, the onyx marble of commerce.[1]

Monday, July 27, the work of inspecting the onyx quarries in the desert to the southeast having been completed, a start was made once more for Rosario, though over for the most part a somewhat different route. After leaving the canyon, or arroyo, and the rocky divide, our route lay over an undulating desert plain with flat-topped mesas on the southeast and mountain peaks visible on all sides. A portion of the plain was actually paved with basaltic fragments, though no basalt flow in place was observed. The onyx beds, noted above, lie in some cases like a pavement on the floor of the desert, the chief flora and general character of the landscape being as shown in Plate 10. At the end of the second day from the arroyo, i. e., Tuesday night, July 28, we

[1]See the Onyx Marbles, their History, Origin, and Uses. Report U. S. National Museum. 1895, pp. 539-585.

camped at San Fernando, now represented only by the ruined mission and a few huts, occupied by Mexicans and their numerous progeny, while twice the number of dogs and a million times as many fleas served to fully sustain the national reputation.

The high mountain ridges at San Fernando are in part of compact greenish quartz porphyry, sometimes so jointed as to resemble stratified sedimentaries with gentle slopes toward the east and more precipitous toward the west. Passing, next morning, northward and eastward of San Fernando, the range from a slight distance shows highly tilted stratified beds, and the landscape, with its pole-like Fouquiera, is weird in the extreme, particularly about sundown. (See Plate 3.) For the remainder of the journey the route lay over a region essentially identical with that already described, San Quentin being reached early in the morning of July 31 in season to catch the fortnightly steamer for San Diego.

THE MINERALOGICAL COLLECTIONS IN THE U. S. NATIONAL MUSEUM.

BY

WIRT TASSIN,

Assistant Curator, Department of Minerals, U. S. National Museum.

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A mineral collection in a public museum should present all of the definite varieties of minerals occurring ready formed in nature, their associations with other minerals, their occurrences, and finally their chemical, morphological, and other physical features. It must meet the needs of the chemist, the crystallographer, the physicist, the geologist, the petrographer, the student, and the observer who may desire to obtain concise and specific information in any and all branches of mineralogy, and finally it should be a university extension of the broadest kind where one may secure a knowledge of minerals from the cases with as little reference to the library as possible.

With these ends in view the mineralogical collections of the National Museum are divided into three general series—the exhibition series, the study series, and the duplicate series. The first of these, the exhibition series, is primarily intended for the public and the student. It is divided into two parts—the systematic series and the comparative series.

THE SYSTEMATIC SERIES.

The systematic series treats of the properties of minerals in their relations to the several kinds of minerals, and the description and systematic arrangement of the several species. Here will be found the several representatives of the mineral kingdom, selected to illustrate occurrence, association, color, and typical development. Here too are to be found the rough and cut specimens of gems and ornamental stones, the collection of meteoric bodies, and the "special locality" collections illustrating certain regions in the United States where a mineral or a series of minerals occur under noteworthy or special conditions.

GENERAL ARRANGEMENT.

The systematic series is divided into two general classes—native elements and compounds of the elements. The compounds of the elements are further divided and grouped under certain heads according to, and which take their names from, their more negative constituents as follows: Compounds of the halogens, fluorides, chlorides, bromides, and iodides. Compounds of sulphur, selenium, and tellurium; also arsenic and antimony, including sulphides, selenides, and tellurides; arsenides, antimonides, sulpharsenides, and sulphantimonides; also sulphosalts. Oxygen compounds, including oxides and the oxygen salts, borates, aluminates, ferrites, chromites, manganites, uranates, carbonates, silicates, titanates, columbates, tantalates, nitrates, vanadates, phosphates, arsenates, antimonates, sulphates, chromates, tellurates, molybdates, and tungstates. Compounds of organic origin, including salts of organic acids and hydrocarbon compounds.

Each of these classes is further separated into groups, the minerals included in any one group being such as are related in the minor details of chemical composition and physical properties. Each of these groups is preceded by a general group label giving the class to which it belongs, the group name, the minerals composing that group together with their chemical composition, system of crystallization, and a short description of the occurrence, association, and characteristic form of each member of the group. The following label will serve to give a clearer idea of this arrangement:

TUNGSTATES.

Wolframite Group.

Wolframite,	$(Fe,Mn)WO_4$	Monoclinic.
Hübnerite,	$MnWO_4$	Monoclinic.

Wolframite.—Chiefly ferrous tungstate, with some manganese. It occurs in irregular lamellar, coarse divergent columnar, and granular masses, and in crystals, commonly tabular. Color and streak nearly black. Wolframite is often associated with tin ores, and with quartz carrying bismuth, scheelite, pyrite, galena, sphalerite, etc.

Hübnerite.—Chiefly manganese tungstate, with some iron. It occurs in bladed forms and massive in quartz, and with alabandite, rhodonite, scheelite, fluorite, and apatite. Color brownish red, hair brown to nearly black. Streak yellowish brown.

Following the group label, arranged in order from left to right, are the several members of the group, selected to illustrate as completely as possible their occurrences, associations, and variety in form and color. Each specimen is mounted upon a block, in front of which is a small label giving the name of the species, the minerals associated with it in that particular specimen, if any, its locality, catalogue number, and from whom and how received.

The several groups are placed in regular order in the cases, and each case carries a case label giving the name of the class to which its contents are referred. In the upper left-hand corner of each case is a numeral followed by an arrow, which serves to indicate the sequence

in which the cases are to be studied, and also to facilitate reference to the text of a descriptive catalogue soon to be printed.

The arrangement of the "special collections" is essentially the same, except that in place of the group label there is a general descriptive label applying to the entire case, as follows:

ZINC MINERALS OF NEW JERSEY.

Ores of zinc in workable quantities are found in New Jersey, at Franklin and vicinity, Sussex County. The region is unique in that the deposit consists almost entirely of a mixture of the oxides and anhydrous silicates of zinc. The ore deposits are in beds or veins that are conformable with the stratification of the rocks in which they are embedded; they pitch to the northeast, they dip to the southeast, and they lie in a fold. The zinc minerals occur in the gangue rock associated with a variety of limestone carrying manganese, and with a manganese garnet. The run of the mine is usually a mixture of franklinite, willemite, and zincite.

Franklinite is iron black in color, having a metallic luster, a hardness varying from 5.5 to 6.5, and a specific gravity of 5. It is slightly magnetic, crystallizes in regular octahedrons, and is also massive, granular to compact. It has the chemical composition $ZnFe_2O_4$.

Willemite varies in color from apple green, flesh red, to manganese brown. Its hardness is 5.5, specific gravity 4. It is rarely crystallized, occurring usually in disseminated grains or masses. It has the chemical composition Zn_2SiO_4.

Zincite is of a dark red color, occurring usually foliated massive, or in coarse particles or grains, sometimes having a granular structure. Its hardness is about 4, and it varies in specific gravity from 5.3 to 5.7. It has the chemical composition ZnO.

THE COMPARATIVE SERIES.

The comparative series treats of the several characteristics or properties of any one mineral species as applied to all other mineral species. This series is intended primarily for the student of mineralogy. Here the properties of minerals are illustrated and defined. In each case the label containing a definition of the property under consideration precedes a series of specimens, and, wherever they can be used advantageously, a series of models illustrating that property. One example, that of "composition", will serve to illustrate the methods used in this series:

COMPOSITION.

All minerals are composed of either an element alone or two or more elements in combination. Elements are said to combine when on bringing them together a new substance is produced, differing from and possessing properties which, as a rule, are not the mean of those of its constituents. For example, the gases hydrogen and oxygen under the proper conditions combine to form water—a liquid. These combinations are represented symbolically by the juxtaposition of the symbols of the combining elements. Thus a molecule of water, composed of two atoms of hydrogen and one of oxygen, is represented by the symbol H_2O. The multiplication of a group of atoms is denoted by placing the proper numeral to the left of the group of symbols or by inclosing them in brackets and placing a small numeral at the right; thus $3H_2O$ or $(H_2O)_3$ denotes three molecules of water. The combination of groups is expressed by placing their symbols in juxtaposition with a dot between them; thus $Fe_2O_3.H_2O$ denotes a compound of oxide of iron with water. Sometimes a comma or the sign $\dashv$ is used in place of the dot. Further, the letter R is used to denote a varying group of equivalent elements; thus RCb_2O_8 is a compound in which there is a varying amount of the equivalent or isomorphic elements of the rare earths.

Following this label is a series of six typical elements with some of their native combinations. Each specimen is mounted on a block as in the systematic series, in front of which is a small label giving the name, composition, locality, etc., of the individual.

THE STUDY SERIES.

This series contains all that material which appeals exclusively to the specialist. It is the source of the material from which new exhibition series are built, or old ones strengthened. In it is placed all that material which has been the source of investigations, or which it is thought may be made the subject of research. It contains all those specimens which serve to illustrate the occurrence and associations of a mineral in any one locality that are not needed for the exhibition series, or which are not unnecessary duplications of material already on hand.

Each specimen in this series is numbered, labeled, and placed in a paper tray. The several specimens are then arranged geographically by species; the species arranged in groups, as in the systematic series, and placed in drawers. Each drawer contains but one species, and a label giving the contents of that drawer is pasted in the upper left-hand corner of its front.

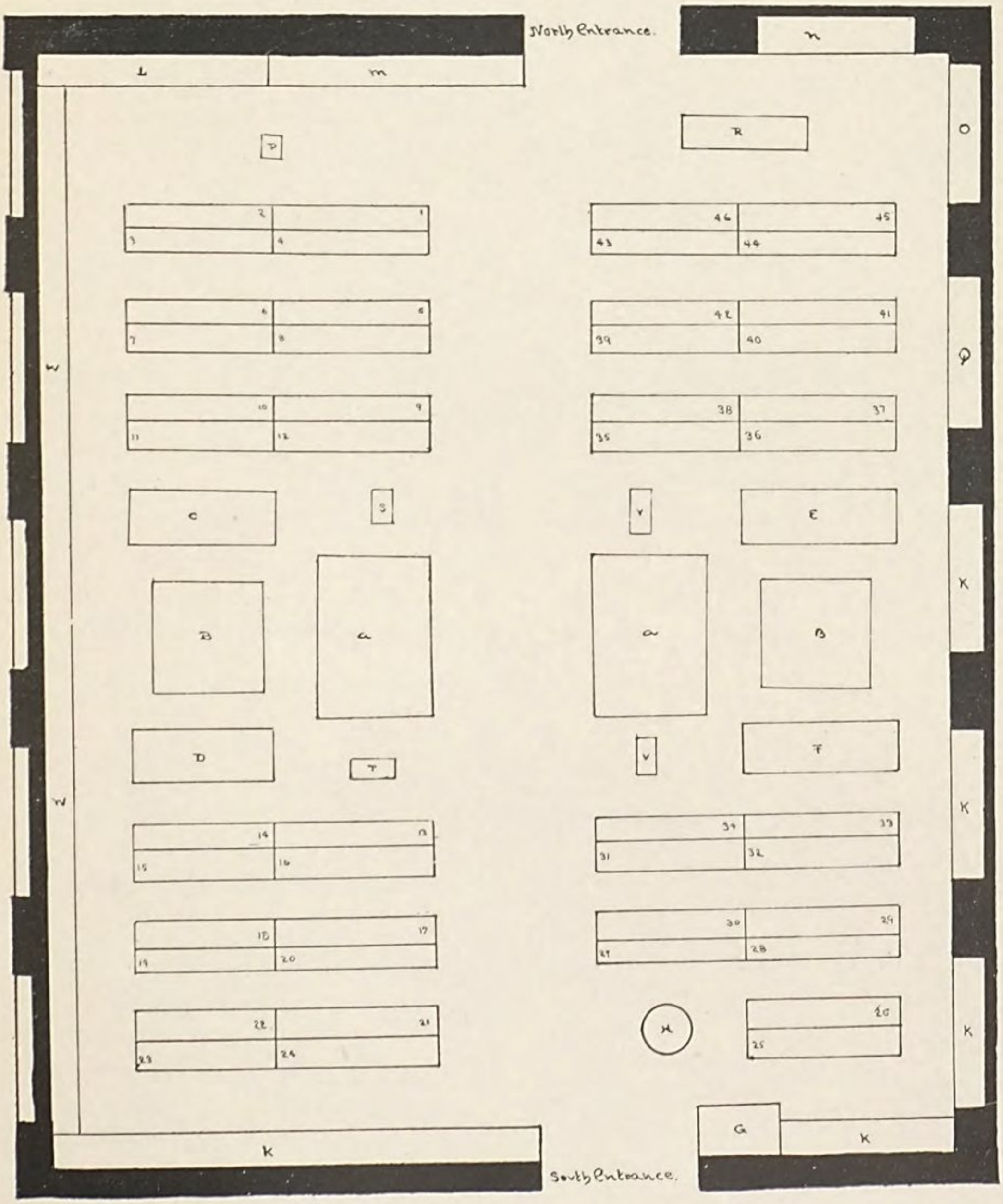
This series also includes all the original and type material belonging to the Department. These are brought together in a series of drawers reserved for that purpose, and all of the type or original specimens which are not needed to complete the exhibition series are here placed, together with a copy of the original papers, or at least a reference to them, and a bibliography in which the work has appeared. Those types used in the exhibition series are here indicated by a card giving its exact position in the cases.

THE DUPLICATE SERIES.

This series includes all that material not needed for the exhibition or study series; and from it all exchanges, gifts, etc., are made up.

INSTALLATION.

The species and varieties of minerals—that is, the systematic series—are arranged in forty-six slope front-floor cases. Beginning with the first on the right, entering the hall from the north, the contents of these cases are as follows: 1–2, native elements; 3–4, fluorides, chlorides, bromides, and iodides; 5–9, sulphides, selenides, tellurides, arsenides, antimonides, and sulphosalts; 9–16, oxides; 17, borates, aluminates, chromites, ferrites, manganites; 18–22, carbonates; 23–37, silicates; 38, titanates, columbates, and tantalates; 39, nitrates and vanadates; 40–42, phosphates and arsenates; 43–45, sulphates; 46, chromates, molybdates, tungstates, and uranates. The several special collections, which may be recognized by their case labels, are contained in the cases marked A, B, C, D, E, F, etc., in the plan (Plate 1). The wall case W on the west side of the hall contains the comparative series.



PLAN OF THE MINERAL HALL.

THE TONGUES OF BIRDS.

BY

FREDERIC A. LUCAS,

Curator, Department of Comparative Anatomy, U. S. National Museum.

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THE TONGUES OF BIRDS.

By Frederic A. Lucas,

Curator, Department of Comparative Anatomy, U. S. National Museum.

The tongues of birds have been not exactly overlooked, but somewhat neglected, by ornithologists, and it is the object of this paper to note a few of their interesting features and to call attention to some of the problems connected with them, in the hope that our younger ornithologists may devote some time to their study. The collecting of skins is undoubtedly the most attractive form of ornithological work, and I do not wish to be looked upon as in anyway disparaging this branch of ornithology with its bearing on the questions of individual variation, color changes, geographical distribution, and the like; but there are so many points on which general deductions can only be made through the patient accumulation and careful sifting of facts that it seems at least unfortunate that more attention is not paid to them by those who have the leisure to do so. It is an easy matter for anyone engaged in collecting skins to gather abundant material for the study of tongues,[1] and it seems a pity that so many good specimens should have been wasted when they could so readily have been preserved.

While the tongue is so intimately related to the beak, there is less unity of purpose between them than might at first sight be supposed, and the size or shape of the one is no criterion as to the size or shape of the other. The beak of a bird serves the purpose of a hand. With it he chips the shell and introduces himself to the world; with the beak the bird gathers its food, preens its feathers, builds a nest. He may use it, like the parrots, in climbing, or, like the Carolina parrakeet, may even hang himself up to sleep on the inside of a hollow stump. It would sound well to continue the simile, and say that as the bird's beak is a hand, so the tongue is a finger; but the true and the beautiful are by no means as synonymous as one might wish, and all that can be truthfully said is that sometimes, or to some extent, the tongue

[1] Thus, my friends, Messrs. William Palmer, E. J. Brown, and the late R. S. Matthews, while collecting the birds of Washington and the vicinity, have supplied me with a large amount of material, all the more valuable because it was quite fresh.

plays the rôle of a finger. This use of the tongue may be very evident as when a parrot manipulates a nut, turning it about with the tongue while holding it between the mandibles, and it seems quite evident, too, that many graminivorous birds, like the crossbill and goldfinch, must use their tongues in a similar manner to extract seeds. But if not used as a finger, the indications are that the tongue does play an important part either in obtaining food or in its subsequent

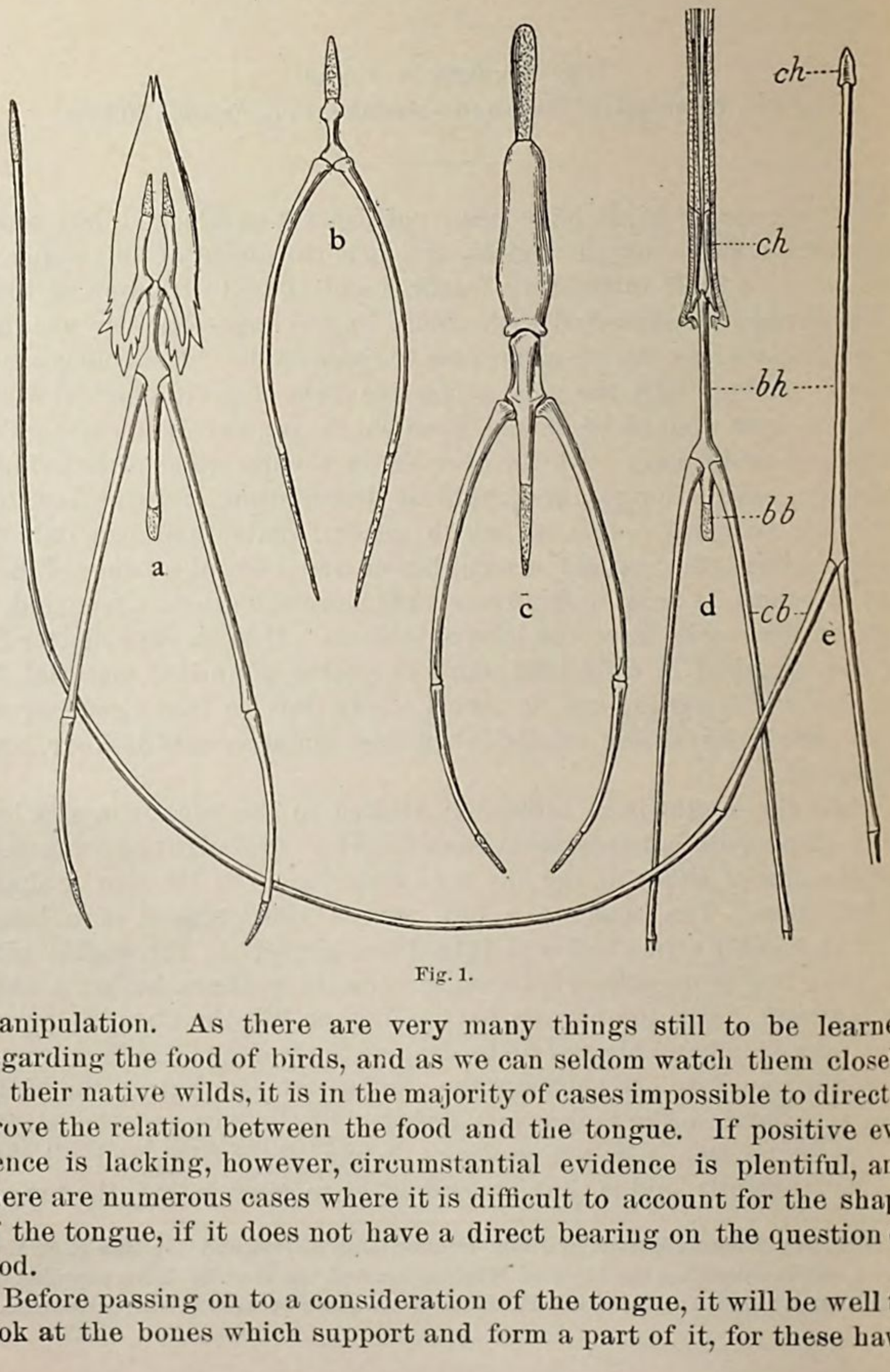

Fig. 1.

manipulation. As there are very many things still to be learned regarding the food of birds, and as we can seldom watch them closely in their native wilds, it is in the majority of cases impossible to directly prove the relation between the food and the tongue. If positive evidence is lacking, however, circumstantial evidence is plentiful, and there are numerous cases where it is difficult to account for the shape of the tongue, if it does not have a direct bearing on the question of food.

Before passing on to a consideration of the tongue, it will be well to look at the bones which support and form a part of it, for these have

to do not only to some extent with the shape of the tongue, but on them depends the power of movement, of extending and retracting the tongue, and the ability to suck up the nectar of flowers. These little bones (fig. 1 *a*), when all are present, are eight in number, the three foremost corresponding to the hyoid, the five hindmost to the first gill arch, of a fish. The shape of these may vary somewhat, the proportions much more, but, after all, the differences between them are not very great. The tongue is attached principally to the two foremost bones, while the others are mainly concerned with the motions of the tongue, furnishing attachment for the muscles by which it is protruded and retracted, as well as serving as guides to make the apparatus run true. The varying proportions of the bones tell something of the importance of the tongue and something of its use. If the foremost bones are well developed, then the tongue is thick and fleshy, as in the duck, and has considerable to do in obtaining or manipulating food (fig. 1 *c*). If the foremost bones are small, or are represented by cartilage, then the tongue plays an insignificant part, as in the cassowary, or is a mere rudiment, as in the cormorant and pelican (fig. 1 *b*). If the hindmost bones are long, the tongue is protruded in getting food, and the length of these bones is a direct measure of the extent to which the tongue can be extended. The proportions of the intermediate bones, the ceratobranchials, have to do with the length of the bill.

The hyoid probably has a more direct relation to the tongue in birds than in any other group of vertebrates. Among mammals the most important office of the hyoid is to support the larynx, and this duty it often performs very effectively. In reptiles the hyoid has much to do with breathing, and in turtles, whose ribs are so tied up as to be of no use in respiration, the hyoid may be seen working backward and forward, forcing air into the lungs. The hyoid of frogs is mostly ornamental, being a hint that the tadpole had an elaborate and well-developed system of gills, which was put off together with the tail. In fishes the hyoid forms a firm support to the gill arches, although it also supports the tongue. In birds the two ceratohyals, or glossohyals, as they are sometimes called from their intimate connection with the tongue, are embedded in the tongue and usually terminate in cartilages which are prolonged for some distance forward well toward the tip of the tongue. Their posterior portions end in the main posterior points of the tongue (fig. 1 *a*).

There is an intimate relation between the dermis and the epidermal layer of the tongue, and if a thin tongue is held up to the light, the little blood vessels may be readily seen running into the harder portion. At the same time, if a tongue is allowed to macerate for a little, the connection between the dermis and epidermis is easily broken down and the horny external layer may be slipped off as a glove is drawn from a finger.

A very curious thing happens in the titmice—to be exact, this is

known to happen in *Parus carolinensis*, the only species in which I have examined the young and traced the growth of the tongue; but the tongues in this group are so similar that I have ventured to generalize from an observation, which is, I admit, a very bad practice—where the epidermal sheath of the tongue is perforated in front, allowing the cartilaginous anterior portions of the ceratohyals to project through.

The smallest and simplest style of tongue is found in some of the fish-eating birds, those which, like the cormorant and pelican, gulp down their food whole, and here tongue and hyoid are mostly, or entirely, in the soft pouch. Flesh-eaters, too, have comparatively simple tongues, and so have many of our little song birds, such as the thrushes; and as this type of tongue is the ground plan on which much more complicated tongues are found, it will serve as a good starting point. The tongue of the robin is rather thin and horny, somewhat thicker toward the base, or hinder portion, slightly split or feathered at the tip, and provided at the back with a row of fleshy backwardly-directed spines. With the exception of these spines, whose purpose seems to be to start food in its downward course, this tongue bears no evidence of adaptation to any particular kind of food.

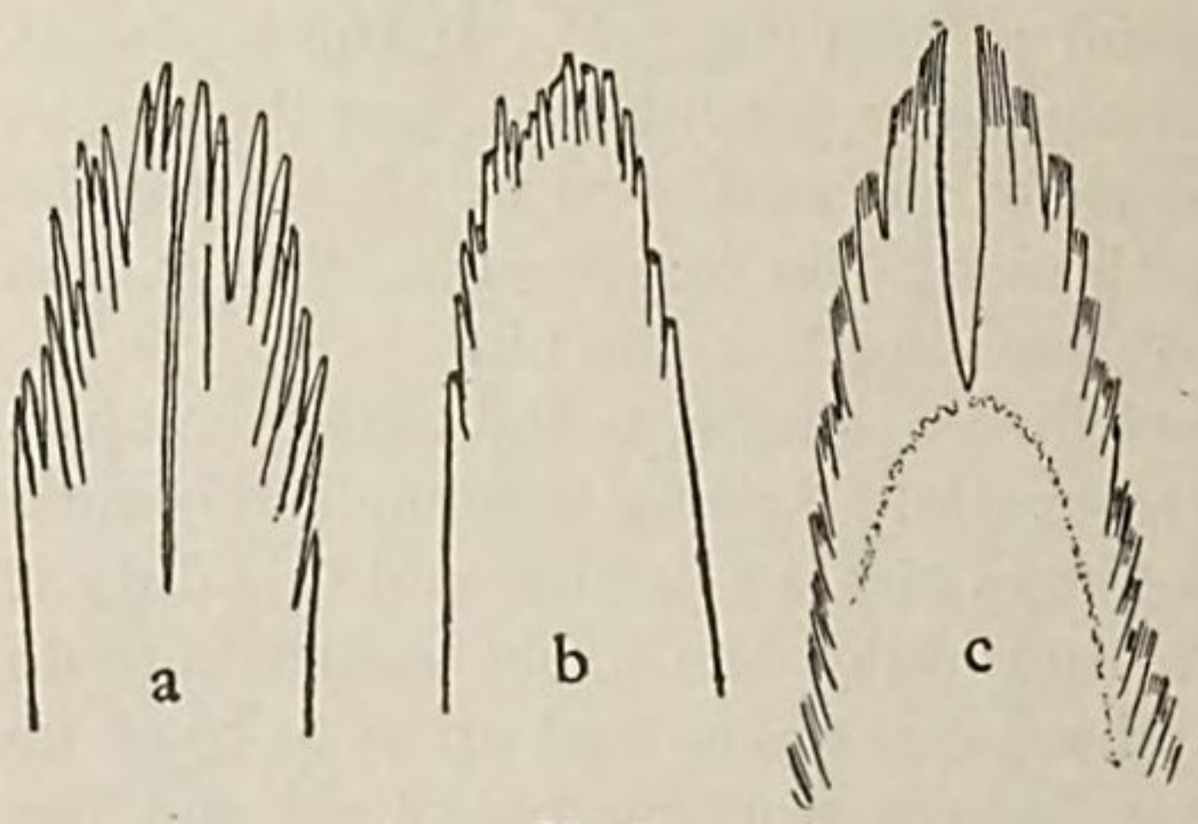

Fig. 2.

This style of tongue, *thin*, slightly cleft, and more or less feathered at the tip, may be called the typical pattern for thrushes, warblers, and the great host of our North American birds. An almost endless number of tongues may be derived from this simple pattern by slight changes in proportions, amount of curvature, number of posterior points, and extent of feathering. Trim off the tip a little and curl up the edges, and we have the tongue of a shore lark (Plate 1, fig. 12); lengthen the tongue and feather it more at the tip, and we have the tongue of a rusty blackbird, and between these two we have no end of varieties. Still, among all these there is no special modification hinting at adaptation to some particular kind of food, for most of our small birds have considerable latitude in the way of diet.

Not only is there much specific variation in birds' tongues, but there is also a considerable amount of individual variation in the degree of feathering or whipping out of the tip. Part of this is due to wear, for some birds, like some people, appear to use their tongues more than others, with a consequent loss of the delicate fringing at the tip, but part of it is due to natural variation, for the unworn tongues of two birds of the same species may have a very different aspect. Whether or not the outer sheath of the tongue is molted, as some birds shed

and renew the horny covering of their beaks, is not known to me, but if this is not the case, the growth of the tongue must be comparatively rapid to prevent it from being worn to the quick.

The tongues of the North American honeycreepers of the genus *Certhiola* are an elaboration of the warbler type, being finer and more complicated in detail, long and slender, much hollowed out toward the tip, deeply cleft, and decorated with long incurved featherings. An Australian honeysucker, *Acanthorhynchus tenuirostris*, carries the fining down of parts to an extreme, having a delicacy of structure which can be appreciated only with a glass. The tongue of still another genus of North American honeycreepers, *Coereba* (fig. 3 *c*), differs from those just described in the matter of detail by splitting the tongue

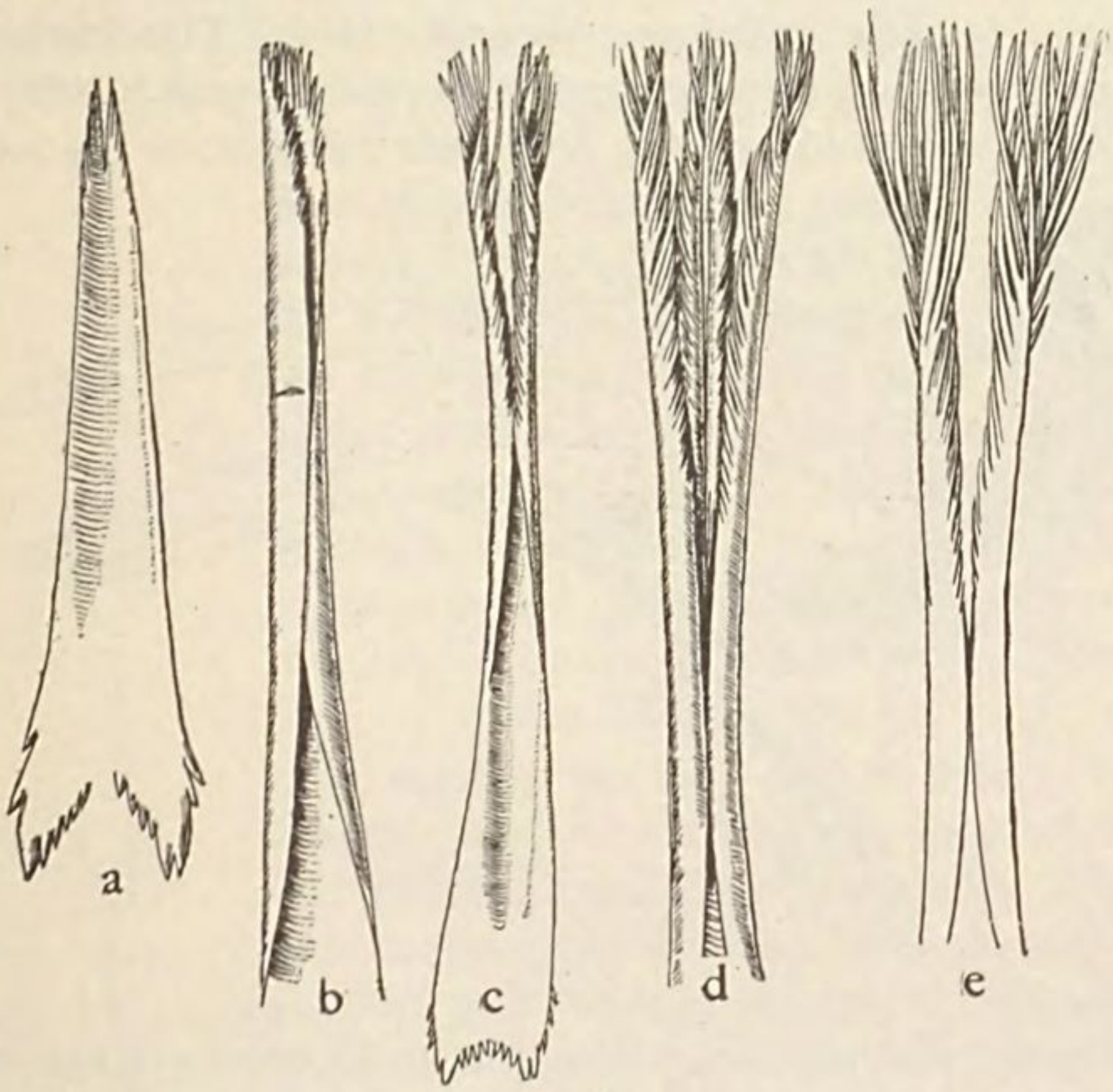

Fig. 3.

more deeply and increasing the length of the feathering which rolls inward from either edge so that the tongue ends in two spiral brushes of extreme delicacy. The Hawaiian and Australian honeysuckers show a still farther advance on this, for in them each of the main branches of the tongue is cleft in twain, and these may again bifurcate so that the tongue ends in four or eight small spiral brushes. By a very little modification a true suctorial tongue, such as that of the sunbirds, *Cinnyris*, or of the genus *Hemignathus* (fig. 3 *b*), may be derived from that of the warbler type. If, instead of splitting and feathering the tip, the edges of the tongue are rolled upward and inward until they meet, a tube will be formed, and this tubular tongue, as well as the others, is subject to various modifications and may become quite complicated. In the sunbirds the edges simply touch each other and

the tube is single; in *Vestiaria* the edges pass by and the tube becomes triple, while by division it may terminate in two or four tubes, as the case may be.

The real effectiveness of a tubular tongue depends not only on the tongue itself, but on the action of the hyoid and its controlling muscles, just as the usefulness of a pump does not lie in the pipe, but in the valves. The manner in which suction is effected has been well described by Doctor Gadow,[1] and is, in substance, as follows: By the contraction of the mylo and serpio hyoid muscles which underlie the tongue, that organ, together with the larynx, is pressed up against the roof of the mouth. The tongue is then protruded and the larynx and back part of the tongue depressed, thus creating a vacuum between tongue and palate, and into this vacuum will flow any liquid into which the tip of the tongue may have been inserted. The fringing of the tip of the tongue, or its conversion into a spiral brush, causes liquid to

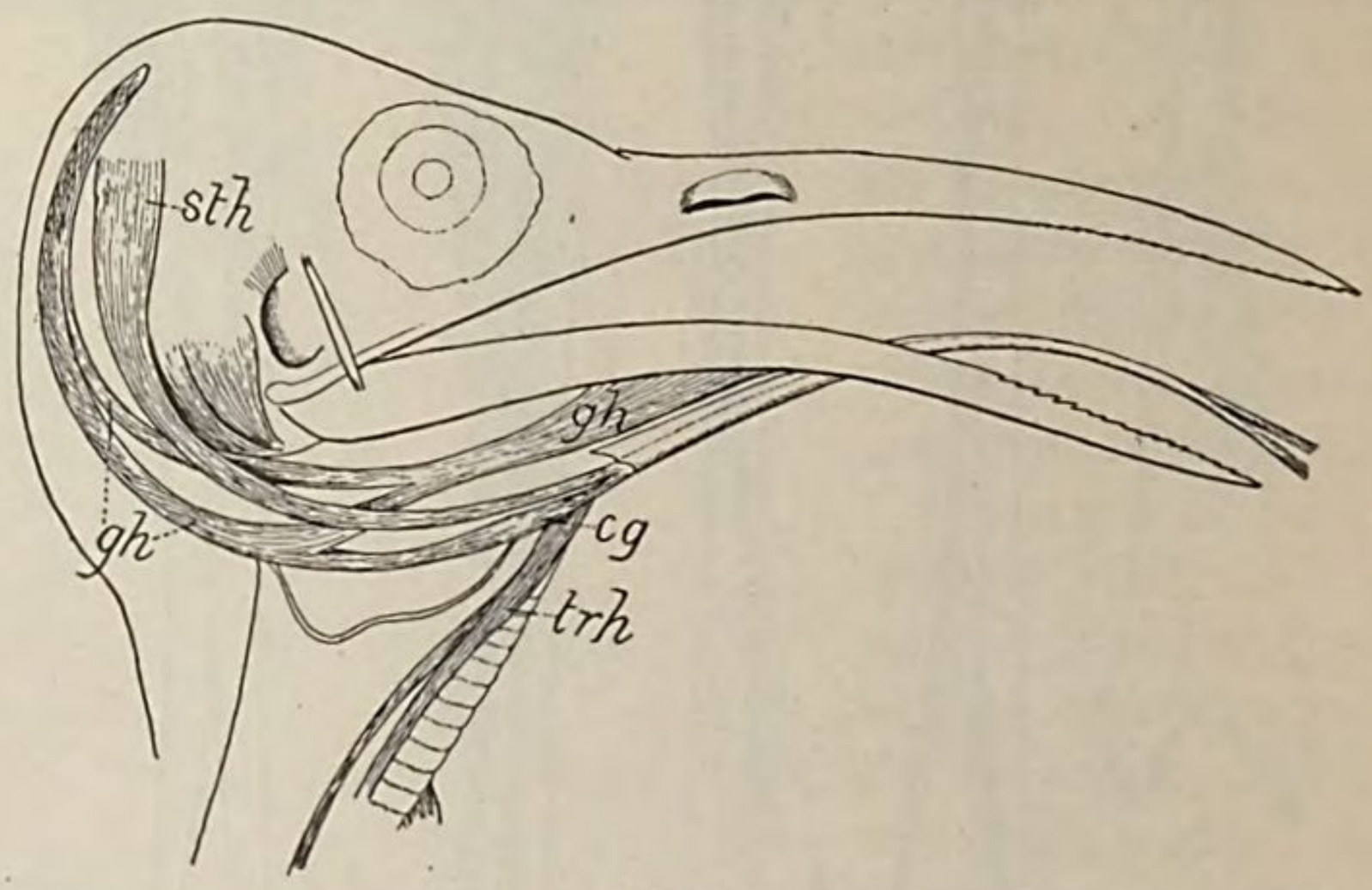

Fig. 4.

ascend to the tubular portion of the tongue by capillary attraction, and thus overcomes any tendency of air to enter the tongue and prevent suction.

If we go back to what we may call the primitive pattern of tongue and make the upper surface thick and fleshy instead of thin and horny, we will have such a tongue as characterizes many, if not the majority, of seed-eating birds, while between the two come such tongues as those of the swifts and swallows, owls and goatsuckers. The amount of variation in these last-named groups is not great, and there is no wide departure from what may be termed the standard pattern. The tongues of the titmice and nuthatches may either be looked upon as modifications of the sparrow type, or as having a pattern of their own. Those of the titmice (Plate 1, fig. 14) suggest a four-tined pitchfork, and can be better understood from the figure than from any description. Those

[1] Proc. Zool. Soc. Lond., 1883, pp. 62–69.

of the nuthatches, while constructed on the same plan as those of the titmice, are more complicated, and resemble a series of rods placed side by side.

The tongues of swifts and swallows (Plate 1, figs. 1–3), just referred to, may be called typical insectivorous tongues, since they are found in birds whose food consists largely, if not entirely, of insects. This style of tongue is slightly fleshy, but not so thick as in the seed eaters, and in a great many species bears, toward the base, numerous papillæ, while in others papillæ are distributed more or less regularly over the tongue. These may be small and blunt, or they may assume the form of spines; in any case their object appears to be to work food backward toward the gullet. Furthermore there is often a plenteous supply of sharp backwardly directed points about the glottis, all to the end that food may glide safely past the windpipe. The tongues of owls (Plate 2, fig. 5), while having an individuality of their own, are intermediate between those of the goatsuckers and the diurnal birds of prey, being rather fleshy and armed with small spines on the posterior half. In some birds of prey there is a system of large pores opening on the base of the tongue, and in advance of the glottis.

Fig. 5.

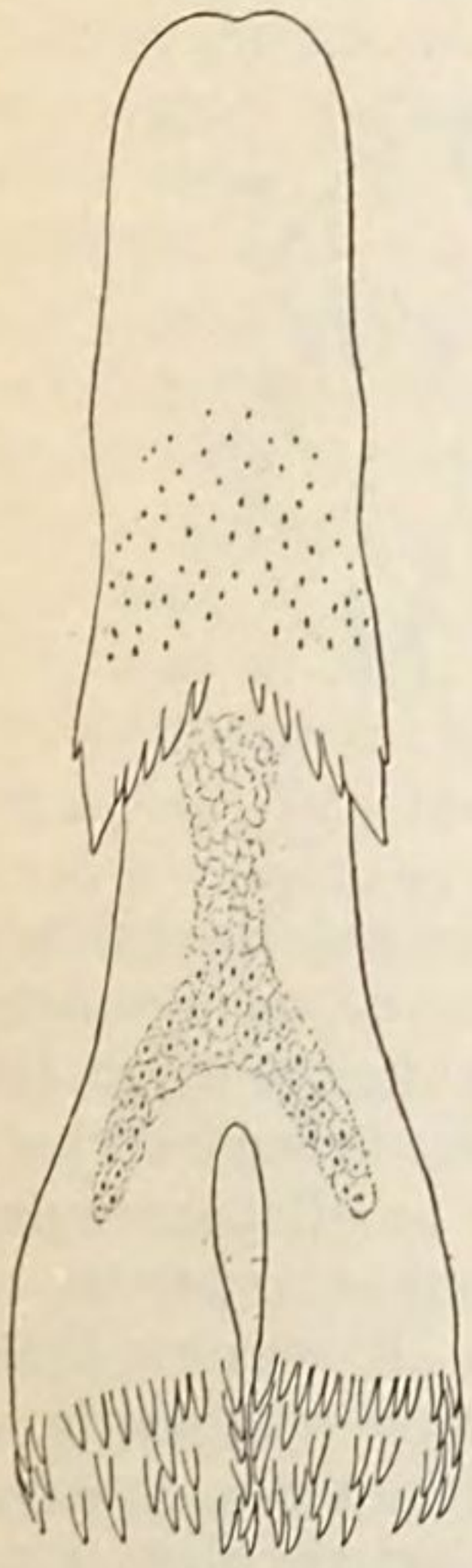

Fig. 6.

Many water birds, such as gulls, sandpipers, rails, and herons, may also be said to have simple tongues, and so do at least some of the pigeons and fowls. From their simplicity it would seem that the tongues of these birds do not play an important part, unless, indeed, the slender tongues of some of the snipe family have a delicate sense of touch which enables them to discriminate in the matter of food, and this, from the horny condition of the tip, seems rather improbable.

There are other types of tongues found in other groups of birds, while there are many birds whose tongues have an individuality of their own and decline to follow any general pattern; in fact, when we come to know more about the tongues of birds, that the exceptions are as numerous as the resemblances, or, as with the votes on a preliminary ballot, there are many scattering.

The humming birds, so far as known, have a uniform pattern of tongue (Plate 2, fig. 12), long and slender, deeply cleft, with each slender branch bordered with a delicate inrolled membrane, which gives the

front half of the tongue the character of a double tube.[1] The base of the tongue is formed by the soft, fatty, fibrous envelope of the basihyal, which stretches like a mass of india rubber when the tongue is protruded, and, like rubber, contracts when the tongue is retracted. Immediately in front of this is the dense cartilaginous sheath of the ceratohyals, forming the bulk of the tongue and practically consisting of two portions—that investing the bony part of the ceratohyals and that surrounding their cartilaginous prolongations. The difference between the character of the epidermis of these two parts is such that in badly preserved or slightly macerated specimens the anterior part may be slipped off intact. If this is done, it will be found to be a hollow tube of cartilage, grooved along the middle above and below, and slightly grooved along the upper, outer surface. This tube is soon divided by a vertical partition, while a little more than halfway between base and tip the tongue forks, each branch continuing hollow for some distance. A fold, or flange, commences near the base of the tongue, on either side, and continues to the tip, growing wider and

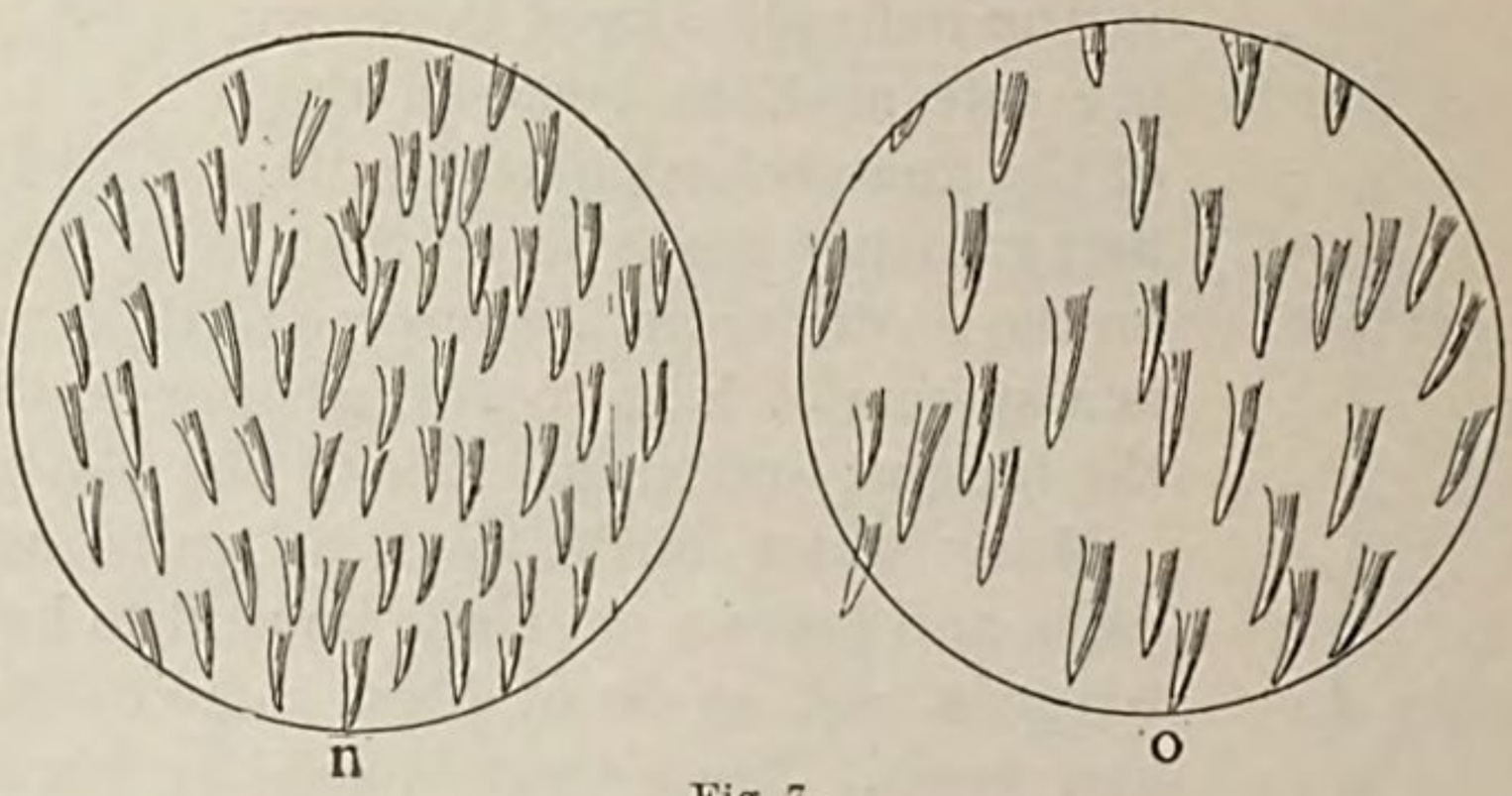

Fig. 7.

thinner as it proceeds, until along the branches it becomes a very delicate membrane. As previously stated, it is these two membranous portions which become rolled into tubes, and when the tongue of the humming bird is spoken of as being tubular, it is these branches which are meant. To say that the tongue consists of two parallel muscular tubes is quite erroneous, as is the statement that the tubular portion of the tongue is drawn back into a muscular sheath. It seems a little doubtful if the tongue of the humming bird can be a true suctorial tongue, for the tubes formed by the anterior part of the tongue are not long enough to reach the back of the mouth, neither are they tight along the edges, although, owing to their small size, liquid would undoubtedly rise in them by capillary attraction. Gosse, who observed these birds in confinement, seems to furnish the clue to the action of

[1] Much confusion and bickering have been caused by more or less loose descriptions of humming birds' tongues, unaccompanied by good explanatory figures, and it has been vigorously asserted, and quite as vigorously denied, that the tongue of the humming bird was hollow, or tubular.

the tongue when he says that in drinking sirup the tongue is protruded for half an inch or so and worked rapidly backward and forward. In doing this the tip of the tongue would naturally fill with sirup when protruded, and when the tongue was retracted it would either be brought far enough back for a vacuum to be formed at the base or liquid could be forced out by pressing the tip against the roof of the mouth as the tongue was again extended.

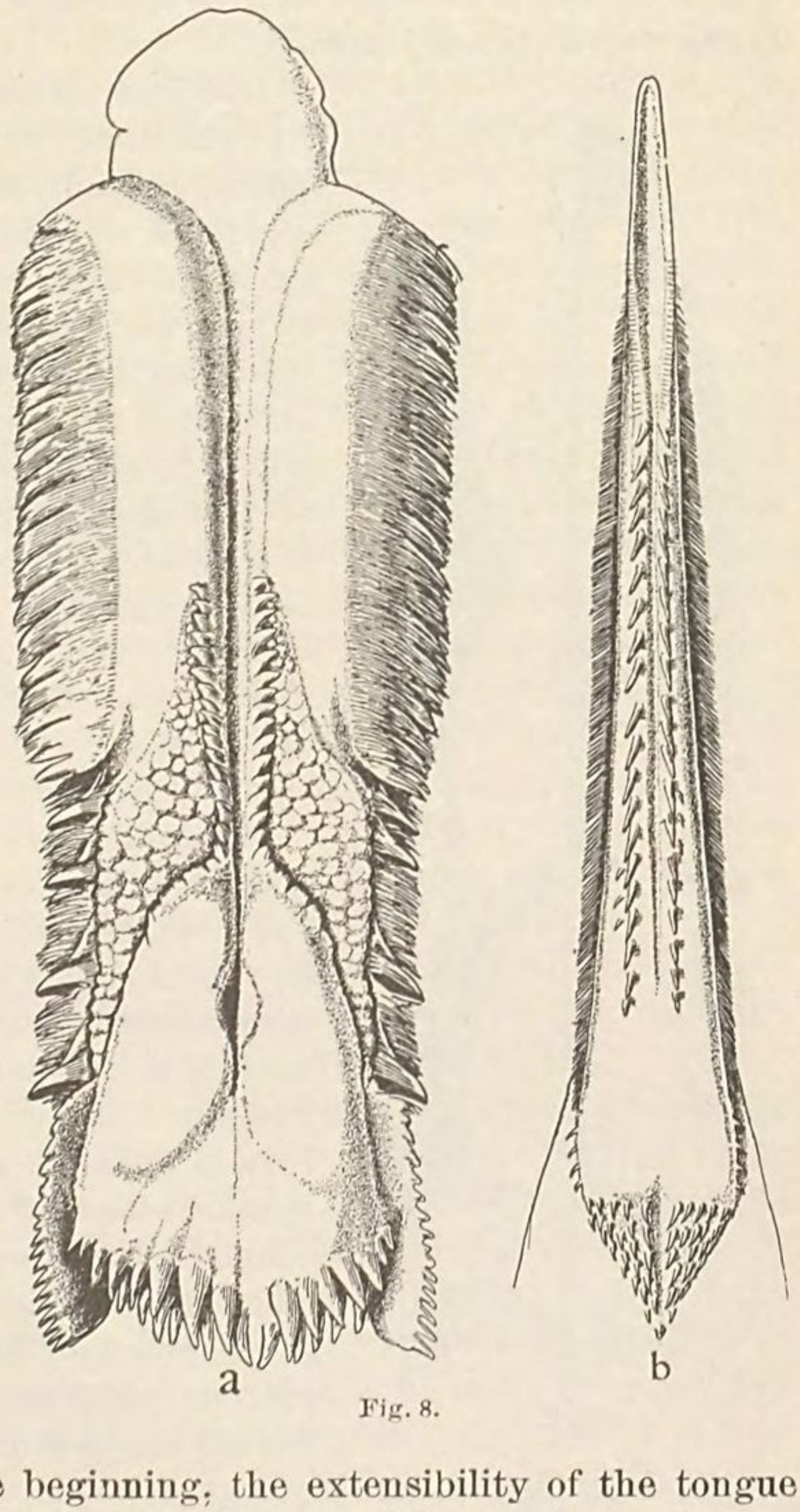

Fig. 8.

The tongues of woodpeckers (Plate 2, figs. 8, 9), so far as they have been observed, are constructed on one plan, being long, slender, and pointed, round or elliptical in cross section, slightly barbed on either side at the tip, and with the upper surface covered with backwardly directed spines so minute that it needs a magnifying glass to properly appreciate them (fig. 7). There are no spines at the base of the tongue itself, as in most birds, for the tongue, when retracted, is withdrawn into a sheath, or makes its own sheath, as when a gloved finger is drawn back and the glove doubles upon itself. In most species the tongue is very extensile—the sapsuckers (*Sphyrapicus*) are exceptions—and since, as said in the beginning, the extensibility of the tongue depends on the length of the epibranchials, we find that these are very long, in most cases even longer than the head. Such being the case, some special provision has to be made for disposing of the hyoid when the tongue is retracted, and this provision is obtained as follows: The two branches of the hyoid pass up over the back of the skull, coming together at the top, and then (usually) turn to the right and continue onward over the forehead, onward beneath the nostril into the beak, and thence quite to the tip. Still another method is found in some

individuals where the ends of the hyoid curl about the eyeball instead of dipping into the beak, but this is found less often than the other. The tongues of some species—the flicker, for example—have but one or two barbs at the tip, others have half a dozen, and still others twenty to thirty, the barbs becoming finer as they become more numerous. Finally, in the sapsucker the barbs have degenerated into stiff hairs, which, instead of raking backwards, stand out from the side like the bristles on a chimney cleaner.

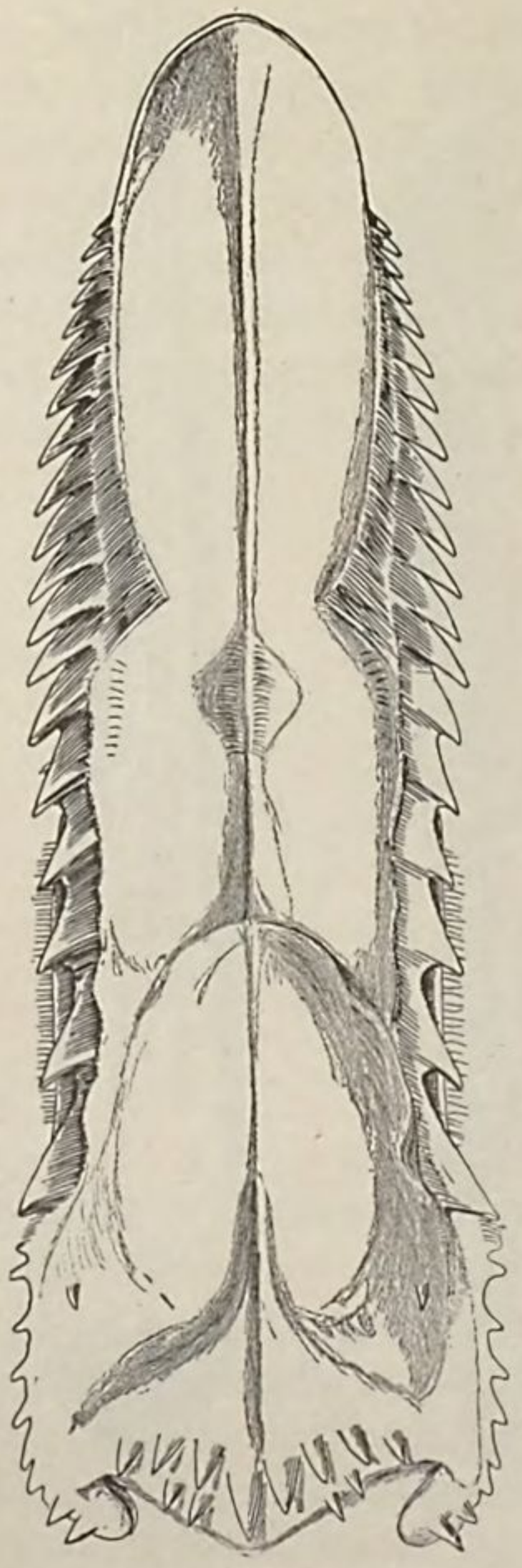

Fig. 9.

It is interesting to note the modifications by which the hyoid is made effective as a probe, or spear, since for this last purpose it should be as rigid as possible. The two foremost pieces of the hyoid are much reduced in size, and are united to form a leaf-shaped point, although we have a hint, in the presence of a groove or perforation, that this point really consists of two bones. The shaft of the spear is partly formed by the long and slender basihyal and partly by the two ceratobranchials, which are brought close together when the tongue is protruded. These last are attached directly to the rear of the basihyal—an arrangement which increases the power of the thrust. (See fig. 1 *e*.)

The ducks have one general type of tongue, and while the mergansers differ much from the broad-beaked species, as might naturally be expected, it is possible here, as among the woodpeckers, to see underlying the modifications that all are but variations of one type. The sides of the tongue are provided with several series of overlapping bristles, interspersed with tooth-like projections, which are simply bristles on a large scale, or bristles fused together, as the horn of a rhinoceros is composed of agglutinated hairs. There may be only three or four of these teeth toward the base of the tongue, as in the ring-necked duck (fig. 8 *a*), or they may preponderate, as in the Canada goose, a species in which they reach the maximum of development, the tongue being armed on either side with a row of saw-like teeth. Finally, there may be no teeth at all, as in the hooded merganser (fig. 8 *b*), whose slender, gutter-shaped tongue bears on its edges only a series of bristles pointing obliquely upward. Ordinarily they point obliquely downward, suggesting a straw-thatched roof, but in any case their apparent function is that of a strainer to aid in securing food.

Other types of tongues are doubtless found in other groups of birds, but whatever the general plan on which the tongue is built, the variations in the execution of details appear to be almost infinite in number, as if nature had striven to have no two tongues exactly alike.

It is a question of interest to ornithologists whether the tongues of birds are modified according to the nature of the food, or whether, underlying all modifications, are certain definite plans of structure indicative of relationship. If the tongues of birds do bear a direct relationship to the character of the food, or the manner in which it is taken, we should not be surprised to find that birds which are only distantly related have very similar tongues, provided their food or feeding habits were similar, while near relatives might be very different in this respect. We should also be able in many cases to see the connection between the shape of the tongue and the character of the food. On the other hand, if the tongue is of any value in classification, it should be possible to tell something of a bird's affinities from an examination of the tongue. Theoretically, too, we would suppose that the less the tongue was used the smaller the probability of its being adaptively modified, and that the chances of finding a likeness between the tongues of the various members of a group ought to be greatest in a group in which the tongue played an unimportant part in getting or manipulating food. Conversely, differences between the tongues of nearly related species might be expected if those species used their tongues, while the greater the similarity between the two species in the manner of obtaining food the greater would be the chances of finding their tongues modified in the same manner, although small differences might be expected since the chance of absolute identity would be small.

To make a fair test of the correctness or incorrectness of these propositions, we should compare nearly related species with entirely different food habits, or very distinct species with similar food habits.

Were we to be guided by the members of a group like the humming birds, we would at once say that the tongues did have a decided value in classification, since we find that all these little birds have the same style of tongue. To offset this, we have the fact that the humming birds have all practically the same habits, eat the same kind of food, and take it in the same manner, so that really they throw no light on the subject. The penguins present an analogous case, for while the tongues of all are strikingly similar to one another, the habits and food of all are also similar.

The tongues of woodpeckers, at least those of our North American species, can readily be distinguished as such, although they differ considerably from one another in length and in the amount and character of the barbing at the tip. It is an easy matter to follow, step by step, the changes by which the sharp barbed tongue of the pileated woodpecker is converted into the brushy tongue of the sapsucker, and as we pass from species to species we can see the barbs becoming more

numerous, longer, and more slender, changing from barbs to bristles and from bristles to hairs, until the transformation is complete and the spear has become a brush;[1] or, if we strip off the adaptive disguises, we will find that the hyoid, whether long or short, is constructed on the same plan, and may see at a glance that *Ceophlœus* and *Sphyrapicus* are akin to one another. At the same time it is an equally easy matter to tell considerable of the food and habits of a woodpecker from the tongue, to make a guess as to the probable preference of the species for animal or vegetable food, and to say whether it spears grubs, eats insects, or probes after ants. Here the tongue apparently points two ways, not only indicating relationship, but more than hinting at the dietary habits of its possessor.

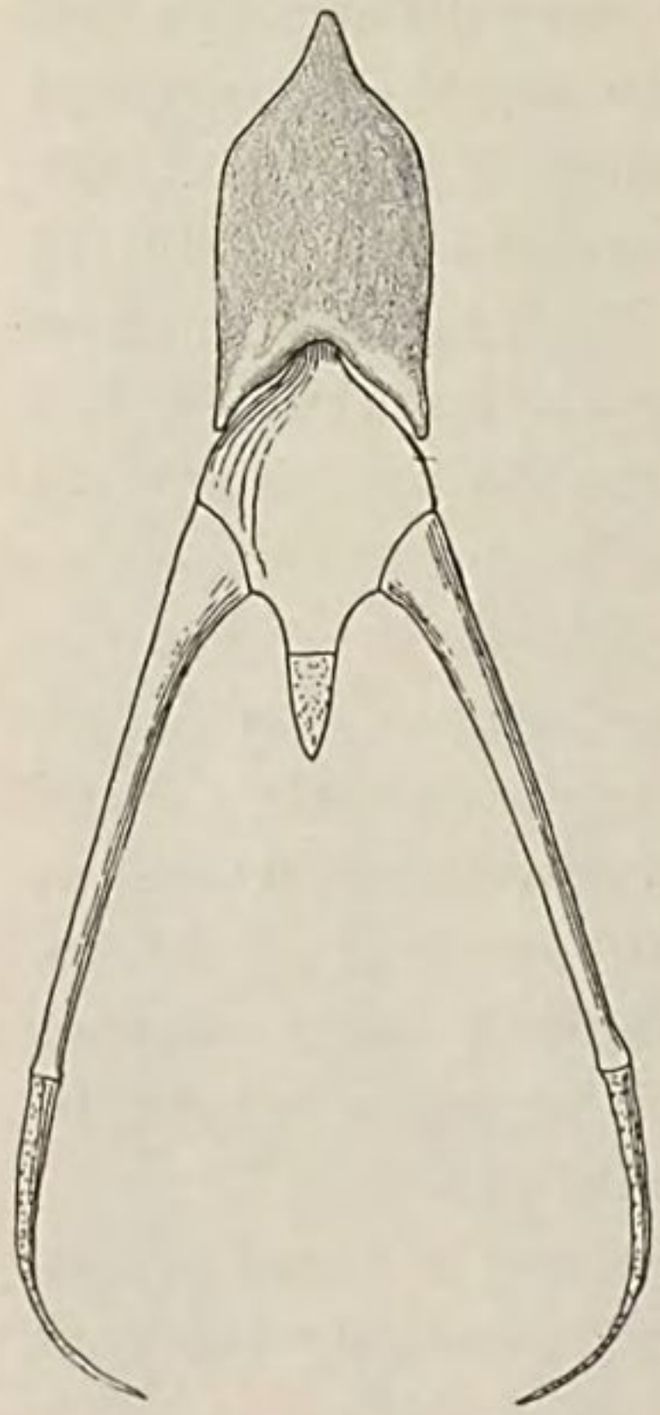

Fig. 10.

The tongues of the swifts have a very close resemblance to one another, so do those of the swallows (Plate 1, figs. 1–3), and the two groups are so much alike in this respect that it is extremely difficult, if not impossible, to tell them apart. Now externally swifts and swallows are very much alike, their food and the mode of taking it is identical, and yet structurally the two are widely separated, pterylosis, skeleton, muscles, alimentary canal, all being different. Here, then, if we followed the tongue, we should be at sea, and in this case we may feel pretty safe in saying that the resemblances between the tongues of swifts and swallows are due to the influence of food. The case may be further strengthened by showing that birds not very closely related to either swift or swallow resemble them in the general style of their tongues, and this is true of at least the cedar bird and one of the trogons (Plate 1, figs. 4 and 5), *Priotelus*, while further examination will probably bring to light further resemblances.

The owls furnish good examples of similarity of tongues arising from, or at least correlated with, similarity in habits, for the genera *Megascops*, *Asio*, *Nyctea*, *Speotyto*, and *Strix* have tongues built on the same plan, the main difference being that *Strix*, which is a long-faced bird, has a long tongue. It might perhaps be assumed that because the beak was long the tongue would of necessity be long also, but this by no means follows, for the short tongues of the long-billed kingfishers warn us that there is no necessity in the case at all, and that the length of the bill is no index to the length of the tongue.

The opposite state of affairs, differences among related birds, is well

[1] Lucas, F. A. The Tongues of Woodpeckers. Bulletin No. 7, U. S. Department of Agriculture, Division of Ornithology and Mammalogy.

shown in certain finches where members of the same genus even may have quite different tongues, although the direct connection between these differences and the character of the food may not be evident. The tongues of the several species of the genus *Spinus*, shown on Plate 2, figs. 6–10, although constructed on the same general plan, offer considerable differences of detail, our common goldfinch, *Spinus tristis*, being the most highly specialized. The members of the genus *Melospiza* differ even more among themselves, and while Lincoln's sparrow, *M. lincolni*, may have the tip of the tongue perfectly simple, the song sparrow, *M. fasciata*, has the tip quite elaborately fringed. So common a bird as the English sparrow has an aristocratically unique tongue, quite unlike that of any of his relatives on this side of the Atlantic, and still other finches might be adduced to show how great is the range of form in this family.[1]

The hooded and the red-breasted mergansers are quite different from each other in their tongues, and yet, so far as we know, there is not sufficient difference in the nature of their food to account for this discrepancy; neither does the fact that they have been deemed sufficiently far apart to be placed in two distinct genera signify, for the swifts and swallows show that birds belonging in different suborders even may have very similar tongues.

The reasons for the modifications of the tongue of the red-breasted merganser are evident; the two rows of sharp, reverted spines on the tongue, which are more nearly teeth than are the serrations of the bill, are to help the bill in catching and swallowing small fishes, while the feathering of the edge may be to aid in capturing still smaller fry, although it is quite as probable a hint of affinity with the other ducks. The tongue of the hooded merganser, which is like that of a duck reversed, is a puzzle whose solution calls for a better knowledge of the food and habits of the bird.

Finally, not to needlessly multiply instances of differences between the tongues of related species, it may be said that while the petrels have much similarity in food and habits they differ very materially in the matter of tongues.

It is next in order to produce circumstantial evidence in the shape of tongues whose peculiarities can be apparently explained by the character of the food or known habits of feeding, in order to demonstrate the close relations between the two. The number of evident adaptations would undoubtedly be very much increased could we observe birds more closely in their native state, for we might then see the relation some curious tongue bore to some special kind of food, or catch the particular trick of manipulation for which it was adapted.

Most insectivorous birds swallow their prey without any special manipulation, and this, to a great extent, is true of the fruit eaters.

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[1] Lucas, Frederic A. The Taxonomic Value of the Tongue in Birds. The Auk, XIII, No. 2, April, 1896, pp. 109–115.

Graminivorous birds either need, or find it advantageous to have, some special device for getting seeds or for husking them before they are swallowed, and these have fleshy tongues, which, together with the character of the tip, must enable them to hold seeds well while removing the husk. Apparently the delicacy of the tongue is no direct criterion of the quality of the work done by it, for the cow bunting, which cleans small seeds most dexterously, is by no means remarkable for the character of its tongue, and, on the other hand, it is not easy to see why the song sparrow should have a tongue so finely fringed at the tip.

Such scoop-like tongues as those of the cross-bill and goldfinch (Plate 1, figs. 6 and 11) seem to bear a direct relation to the procuring of food and to be specially designed for extracting seeds. Were thistles in seed the year around, the tongue of *Spinus tristis* would be a clear case of adaptation, for it appears admirably fitted either for gathering thistle seeds or for removing the husks after they are gathered. However, Mr. Palmer tells me that the gullet of the goldfinch often contains finely-comminuted food, almost in the condition of dough, and the tongue is very likely the instrument by which this state is brought about. Knowing that the shore lark feeds largely on small grass seeds, the tongue is seen to be a nice little scoop for collecting them, while the miniature pitchforks of the titmice (Plate 1, fig. 14) are equally good instruments for picking spiders, eggs of insects, and similar food, out of the crevices into which these little birds are perpetually prying, although it would apparently be more efficient could it be protruded farther.

The brush-tongued birds, the South American *Coerebidæ* and the honeysuckers of the Sandwich Islands and Australia, are good examples of similarity of tongue structure in very different birds due to adaptation for a certain kind of food or method of obtaining it. These birds frequent flowering trees, either for the nectar of the blossoms or for the insects which lurk therein, or for both, and their tongues are all more or less extensile, and brushy at the tip. Whether the liquid is actually sucked up or whether it is dipped up by the tongue tip as by a swab, the result attained is the same.

Some of the brush-tongued birds certainly eat insects and spiders, but the tongue would seem to be as well adapted for sweeping up these as for sucking up sweets. Moreover, it should be remembered that a tongue may be a special adaptation for a given kind of food, procured at certain seasons of the year, and therefore specially desirable only for a short time. Or a bird may prefer a particular kind of food, and yet eat something else when that is not to be had, just as the hairy and downy woodpeckers have tongues specially adapted for spearing grubs, and still eat beechnuts. We know that humming birds are fond of sweets, and we are equally certain that the bulk of their food consists of insects,[1] and if they dine on one and make their dessert of the

[1] Lucas, Frederic A. The Food of Humming Birds. The Auk, X, No. 4, October, 1893, pp. 311–315.

other, the adaptive features of the tongue can still be accounted for. So the fact that the honeycreepers eat berries and the honeysuckers and sunbirds spiders and insects does not disprove the primary adaptation of their tongues for getting nectar. At the same time it is to be noted that tubular and brushy tongues occur only (?) in birds of tropical or subtropical regions, where flowers are to be found throughout a great part of the year.

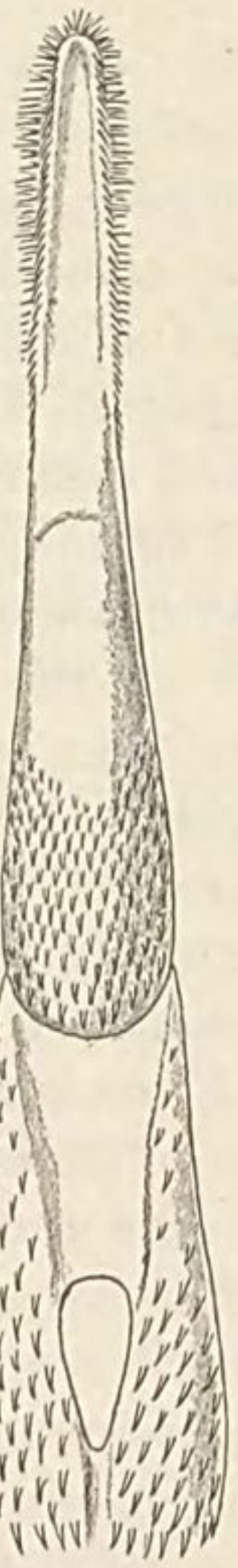


Fig. 11.

The woodpeckers afford a good illustration of the modifications of the tongue according to the nature of the food, for in this group each variation in the tongue appears to be accompanied by a corresponding variation in the general character of the food.[1] The flicker has fewer barbs on its tongue than any other species; also it has one of the longest tongues and the largest salivary glands. Now, the flicker eats more ants than any other species, these insects constituting about forty per cent of its food, and it not only obtains them from the surface of the ground but by probing for them in anthills. The three-toed woodpecker heads the list of eaters of grubs, and this bird has, in addition to a long and fairly well barbed tongue, an unusually good bill for cutting into trees; in fact, it may be said that the two go together, for similar conditions are found in other species. The little downy woodpecker comes next as a destroyer of wood-boring larvæ, unless it should be exceeded by the great pileated woodpecker, with its powerful beak and sharp tongue. The sapsucker seems to eat no boring grubs, but as an ant-eater it stands next the flicker, the contents of its stomach averaging thirty-six per cent of ants. It is, as its popular name implies, a drinker of the sap of sweet trees, and it also preys upon the flies and other insects which are attracted by the exuding sap. The brushy tongue (fig. 11) is well adapted for procuring such articles in the bill of fare, but it is quite useless for extracting grubs from their hiding places, being barbless and capable of but little extension. The red-headed woodpeckers, although possessed of very extensile tongues, have these organs rather feebly barbed, while they also have

Fig. 12.

[1] Beal, F. E. L. Preliminary Report on the Food of Woodpeckers. <Bulletin No. 7, U. S. Department of Agriculture. Division of Ornithology and Mammalogy.

pointed, little compressed beaks, not well adapted for cutting into wood, and the members of the genus *Melanerpes* are seemingly more fond of fruit than are any other species, and they are the most omnivorous of the North American woodpeckers.

In all these cases the relation between form and food is plain, but there are many others in which peculiarities of the tongue imply modification for some special end without that end being obvious. Such is the case with the penguins, whose curious spiny tongues (fig. 12) must play some definite part in their domestic economy, but whether modified for the catching of fish, crustaceans, or squids is not quite clear, although such tongues would seem to be well adapted for catching small crustaceans.

The tongues of our American vultures too should have some bearing on their diet, and possibly their hollow shape and roughened edges are for the purpose of rasping meat from bones, although it may be that the adaptation is to quite a different end. The long, slender, feathery tongues of toucans present another riddle which can only be answered by one having full knowledge of their habits, although it certainly seems a curious adjunct to the stout beak with which it is associated.

From what has been said above it will be seen that, in a large number of cases, there is certainly a clear relation between the shape of the tongue and the character of the food; that some closely related birds differ as to their tongues while distant relatives present similarities that seem to be connected with similarities in their food, and that, on the whole, the modifications of the tongue appear to be adaptive and do not offer characters that can be safely used in classification.

A final point, deserving of study, is that of the changes which take place during growth and the rapidity with which they are performed. As is well known, the bills of long-beaked birds are acquired after hatching, and long tongues grow in a like manner, such a slender, extensile tongue as that of the humming bird being developed between the time the young emerges from the egg and the date of quitting the nest. The first indication of the long branches into which the tongue is ultimately divided consists of a little notch in the tip, while there is only the merest rudiment of the membrane which is to border these branches (Plate 2, figs. 10–13).

The growth of the tongue, and of the hyoid as well, must be quite as rapid in woodpeckers as in humming birds, for in a full-fledged nestling of the downy woodpecker, a species which is provided with one of the longest of tongues when adult, the hyoid barely reached to the center of the skull, between the eyes. The same specimen showed also that the barbs at the tip of the tongue are developed comparatively late, for the only trace of spines in this bird, which would have soon quitted the nest, was a number of reflexed hairs representing the upper series on the tongue of the sapsucker. It seems prob-

able that the barbs make their appearance at, or shortly after, the time the bird leaves the nest, when the young cease to be fed and begin to feed themselves, but a little positive evidence in the shape of specimens is needed to settle the question.

In birds with shorter tongues than those just described the changes during growth are, naturally, not so marked; but even in tongues like those of the chimney swift and screech owl there is a very obvious difference between the tongue of the embryo, or nestling, and that of the adult.

The question of growth with its change of form connected with change of food, or in the manner of getting it, is worthy of careful consideration, but perhaps the most interesting problem presented by the tongues of birds is whether underlying the infinite modifications of the tongue are certain definite forms which may be of use in classification, or whether these forms are all cases of adaptation to particular kinds of food.

The evidence seems to point plainly in the latter direction, but what is needed is a large collection of carefully sifted and assorted facts.

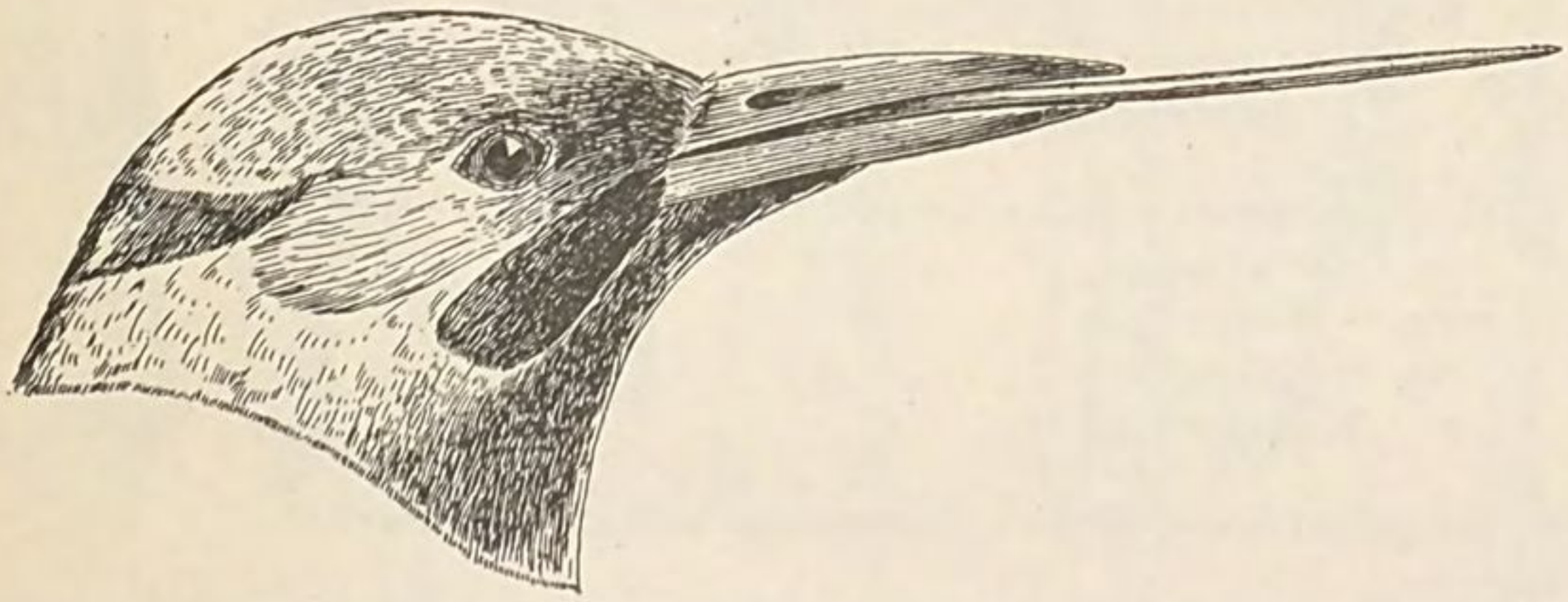


Fig. 13.

EXPLANATION OF TEXT FIGURES.

Fig. 1. Relation of the hyoid to the tongue.
a. Hyoid of Pewee, *Sayornis fuscus.*
b. Hyoid of Cormorant, *Phalacrocorax urile.*
c. Hyoid of Muscovy Duck, *Cairina moschata.*
d. Hyoid of Humming-bird, *Selasphorus rufus.*
e. Hyoid of Flicker, *Colaptes auratus.*
All figures drawn to the same absolute scale.
ch. Ceratohyal.
bh. Basihyal.
bb. Basibranchial.
cb. Ceratobranchial.

Fig. 2. Changes produced in tongues by wear.
a. Tip of tongue of Cape May Warbler, *Dendroica tigrina*, unworn.
b. Tip of tongue of Mourning Warbler, *Geothlypis philadelphia*, much worn.
c. Tip of tongue of Chestnut-sided Warbler, *Dendroica pennsylvanica*, unworn.
All figures greatly enlarged.

Fig. 3. Modifications of tubular and brushy tongues.
a. Connecticut Warbler, *Geothlypis agilis.*
b. Honeysucker, *Hemignathus olivaceus.*
c. Honey Creeper, *Certhiola bahamensis.*
d. Australian Honeysucker, *Tropidorhynchus* sp.
e. Tip of tongue of Honey Creeper, *Certhiola bahamensis.*
All figures much enlarged.

Fig. 4. Principal muscles of the tongue, after Gadow.
cg. Ceratoglossus.
gh. Geniohyoideus.
sth. Stylohyoideus
trh. Tracheohyoideus.

Fig. 5. Tongue of a Goatsucker, *Nyctidromus albicollis*, enlarged.

Fig. 6. Tongue of a hawk, *Archibuteo lagopus sancti-joannis*, showing system of pores, enlarged.

Fig. 7. Spines on basal portion of tongues of Woodpeckers, greatly enlarged.
n. *Dryobates scalaris.*
o. *Melanerpes erythrocephalus.*

Fig. 8. a. Tongue of Ring-necked Duck, *Aythya collaris*, enlarged.
b. Tongue of Merganser, *Merganser serrator*, enlarged.

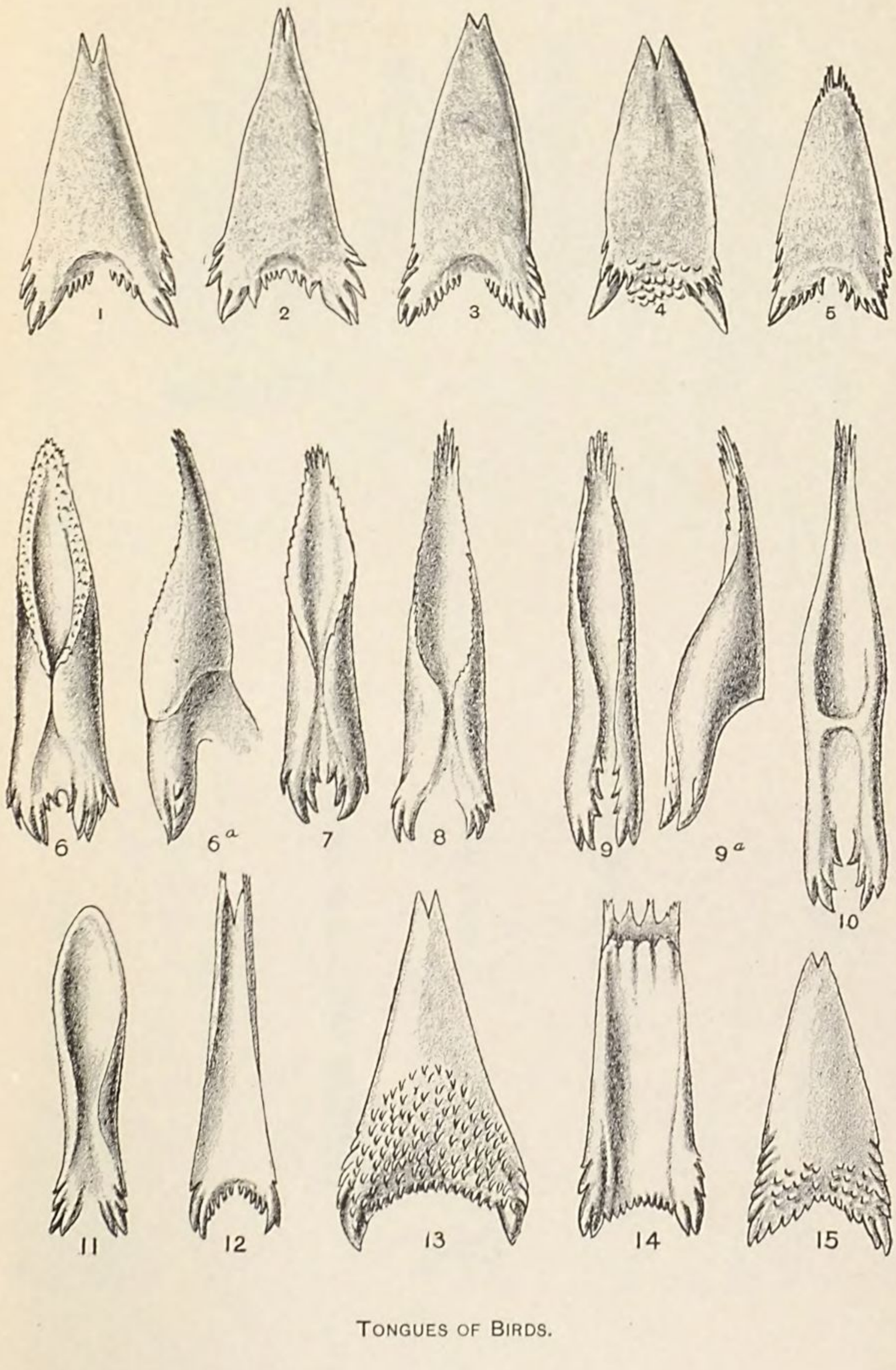
Fig. 9. Tongue of Canada Goose, *Bernicla canadensis*, somewhat enlarged.

Fig. 10. Tongue of Belted Kingfisher, *Ceryle alcyon*, enlarged.

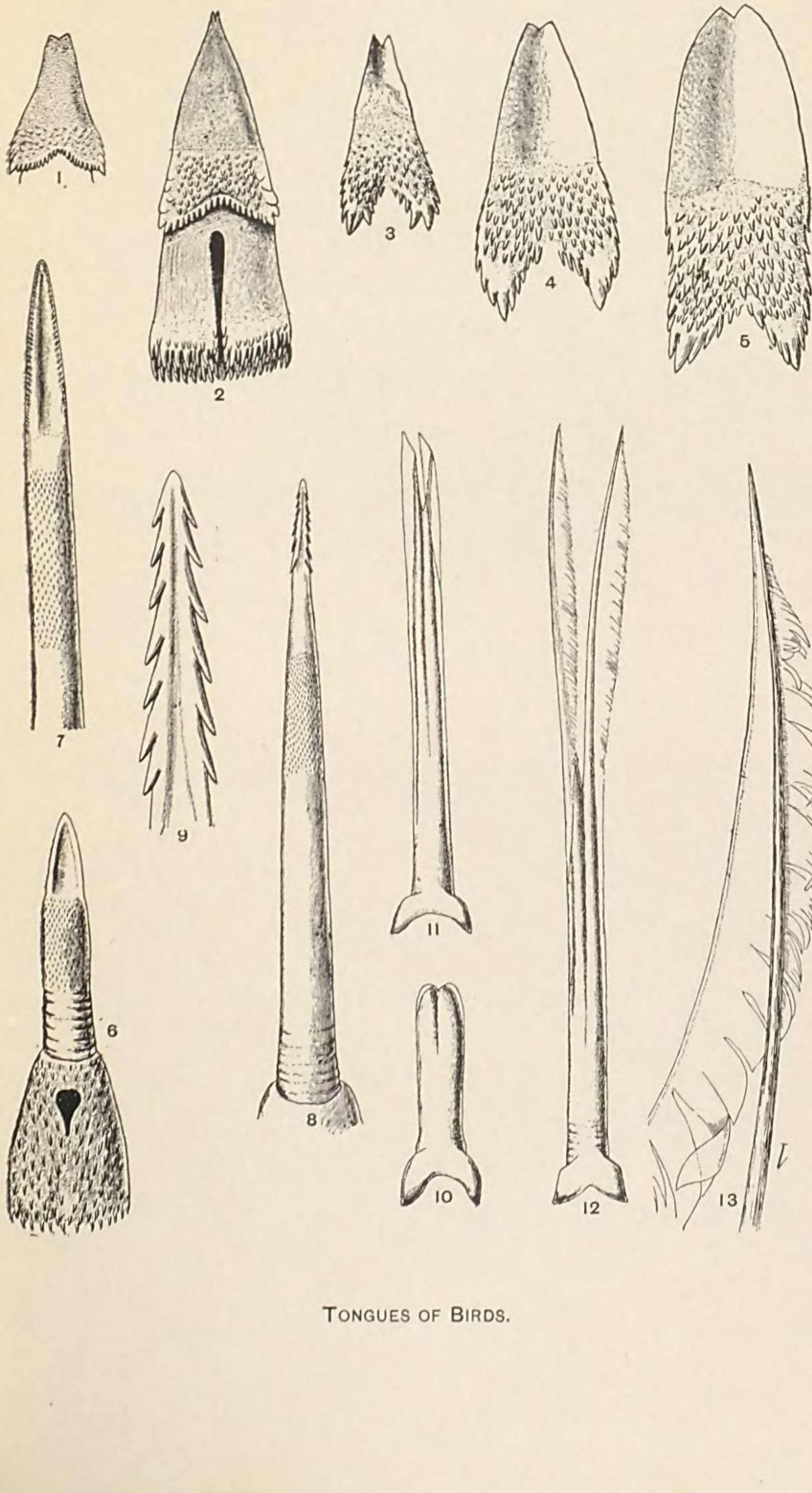
Fig. 11. Tongue of Sap Sucker, *Sphyrapicus varius*, enlarged.

Fig. 12. Tongue of Penguin, *Aptenodytes longirostris*, slightly enlarged.

Fig. 13. Head of Flicker, *Colaptes auratus*, with tongue protruded.



TONGUES OF BIRDS.



TONGUES OF BIRDS.

THE ONTONAGON COPPER BOWLDER IN THE U. S. NATIONAL MUSEUM.

BY

CHARLES MOORE.

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THE ONTONAGON COPPER BOWLDER IN THE U. S. NATIONAL MUSEUM.

By Charles Moore.

In a corner of the National Museum a bowlder of native copper, weighing perhaps three tons, rests upon a plain wooden base. Transferred to the Museum from the Patent Office, in 1858, the copper fragment was accompanied by no records, and this paper has been written with the view of tracing the intricate but interesting story of the once celebrated Ontonagon bowlder.

Worshipped as a manitou by the superstitious Indians during uncounted years, the siren of mining adventurers while yet the flag of England floated over the Lake Country, the objective point of hazardous expeditions by explorer and scientist, the Ontonagon bowlder has never been so left to itself as it has been during the half century that has elapsed since it was brought to the national capital, where the expectation was that all eyes might gaze upon it as the representative of national wealth and enterprise.

About the middle of the seventeenth century the Jesuit missionaries and the French explorers, penetrating the wildernesses about Lake Superior, found among the most treasured possessions of the Indians pieces of copper weighing from 10 to 20 pounds. Often these fragments of copper were regarded as household gods, and from an indefinite past had been transmitted from generation to generation. Tradition also told of larger masses of copper situated at several points along the shores of the great lake, whose shifting sands often covered up the bowlders for years at a time, thus causing the superstitious savages to declare that their offended deities had disappeared for a season.[1]

In 1667 a piece of copper weighing a hundred pounds was brought to Father Dablon. "The savages," he reports,[2] "do not all agree as to the place whence this copper was derived. Some say it came from where the [Ontonagon] River begins; others say close to the lake; and others from the forks and along the eastern bank." Whether the

[1]Journal du Voyage du Pére Claude Allouez, Relation de la Nouvelle France, en l'Année 1667. Sagard, p. 589. Voyages of Pierre Èsprit Radisson, Third Voyage.

[2]Relation of 1670.

Dablon fragment was a float piece of copper, or whether it was a portion broken from the great rock, it is impossible to say. The reference of the Jesuit father, however, makes it evident that at the time when he wrote, the Indians were familiar with the copper region along the Ontonagon, on the west bank of the west fork of which river the great bowlder lay when discovered by white men.

In 1669 the French Government sent Louis Joliet to Lake Superior to search for the deposits of copper so often referred to in the relations of the missionaries, but he got no farther than Sault Ste. Marie, and three years later he turned aside from such material pursuits to accomplish, in company with Father Marquette, the discovery of the Mississippi River. So far as authentic records go, the first white man to visit the Ontonagon bowlder was Alexander Henry, an English adventurer, and he saw it to his cost. Shortly after England acquired Canada from France, Henry established himself as a trader at Mackinac, and his narrow escape from death at the hands of the savages in the massacre at that post in 1763 forms one of the most thrilling chapters of Parkman's "Conspiracy of Pontiac," and is also the basis of Mrs. Catherwood's more recent story, "The White Islander."

In 1771, lured doubtless by the mass of copper at the forks of the Ontonagon, Henry and his associates undertook to pierce the bluffs of clay and red sandstone which bordered that stream,[1] in the hope of finding the vein whence the bowlder came. Only complete ignorance of the geology of the Lake Superior region can explain what Doctor Houghton calls "these Quixotic trials;"[2] and complete failure was the natural result.

In 1819, General Lewis Cass made the first explorations of the Lake Superior region that were undertaken by this Government. Turning from their path, his party ascended the Ontonagon River for 30 miles to visit the mass of copper whose existence, says Cass, had long been known. "Common report," he writes to John C. Calhoun, Secretary of War, "has greatly magnified the quantity, though enough remains, even after a rigid examination, to render it a mineralogical curiosity. Instead of being a mass of pure copper, it is rather copper embedded in a hard rock, and the weight probably does not exceed 5 tons, of which the rock is much the larger part. It was impossible to procure any specimens, for such was its hardness that our chisels broke like glass. I intend to send some Indians in the spring to procure the necessary specimens. As I understand the nature of the substance, we can now furnish them with such tools as will effect the object. I shall, on their return, send you such specimens as you may wish to retain for the Government or to distribute as cabinet specimens to the various literary institutions of the country."[3]

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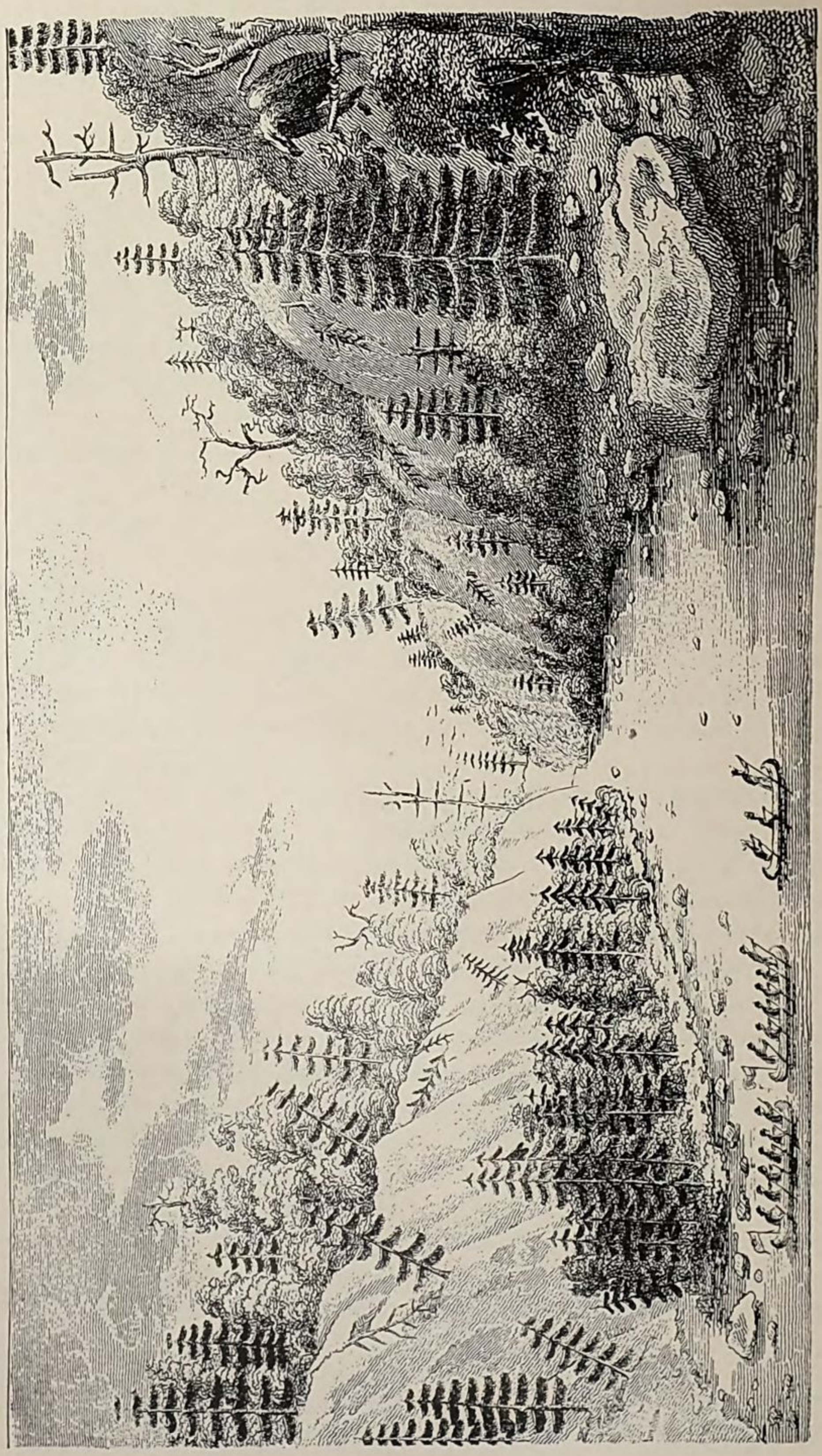
[1]Henry, Alexander. Travels and Adventures in Canada. New York, 1809, p. 231.

[2]Bradish, Alvah. Memoir of Douglas Houghton. Detroit, 1889, p. 204.

[3]Smith, W. L. G. Life and Times of Lewis Cass. New York, 1856, p. 133. Cass never saw the rock, as he himself says in Senate Report 260, 28th Congress, 1st session.



THE ONTONAGON BOULDER IN 1819.

Doctor Henry R. Schoolcraft, who was a member of the Cass expedition, says that the bowlder was found on the edge of the river, directly opposite an island and at the foot of a lofty clay bluff, the face of which appears at a former time to have slipped into the river, carrying with it detached blocks and rounded masses of granite, hornblende, and other rock, and with them the mass of copper in question. "The shape of the rock," he says, "is very irregular. Its greatest length is 3 feet 8 inches; its greatest breadth, 3 feet 4 inches, and it may altogether contain 11 cubic feet. In size it considerably exceeds the great mass of native iron found some years ago upon the banks of the Red River, in Louisiana, and now deposited among the collections of the New York Historical Society, but, on account of the admixture of rocky matter, is inferior in weight. Henry, who visited it in 1766, estimates its weight at 5 tons; but, after examining it with scrupulous attention, I do not think the weight of metallic copper in the rock exceeds 2,200 pounds. The quantity may, however, have been much diminished since its first discovery, and the marks of chisels and axes upon it, with the broken tools lying around, prove that portions have been cut off and carried away."[1]

Schoolcraft calls attention to the fact that the connection of the bowlder with substances foreign to the immediate section of the country where it lies, "indicates a removal from its original bed, while the intimate connection of the metal and matrix, and the complete envelopment of individual masses of copper by the rock, point to a common and contemporaneous origin, whether that be referable to the agency of caloric or water."

Schoolcraft gives a view of the copper rock (see Plate 2) taken from a point below the mass of copper, looking up the river; and from the picture one readily understands with what difficulty the mass was removed. The story of that removal is now to be told.

The party sent by Cass were not so fortunate as he anticipated they would be. They cut about thirty cords of wood, which they placed about the bowlder, and then set fire to the pile. When the copper was well heated, they dashed water upon it, but the only result was to detach pieces of quartz rock adhering to the native copper. The party, having become disheartened, left the country, having moved the rock 4 or 5 feet from the bank of the river; nor did the Barbeau party, who went from Sault Ste. Marie two years later, have any better success. It so happened, however, that Mr. Joseph Spencer, a member of the Cass expedition, told the story of the copper rock to Mr. Julius Eldred, a hardware merchant of Detroit; and for sixteen years this enterprising man schemed and planned how he might succeed where others had failed.[2]

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[1] Narrative Journal of Travels through the Northwestern regions of the United States, etc. Albany, 1821, pp. 175–178.

[2] John Jones, Jr., in the New York Weekly Herald, October 28, 1843.

Until the report made by the State geologist of Michigan, Doctor Douglass Houghton, in 1841, there had been no authentic or trustworthy statements in regard to the copper-bearing rocks of Lake Superior;[1] but within four years from the date of that report the mineral lands from the tip of Keweenaw Point to the Ontonagon River were overrun with prospectors, the great majority of whom left dollars where they found pennies. It is in Doctor Houghton's report that the best scientific account of the copper rock is to be found. "I have thus far," he says, "omitted to allude particularly to the large mass of native copper which has been so long known to exist in the bed of the Ontonagon River, lest, perhaps, this isolated mass might be confounded with the veins of the mineral district. That this mass has once occupied a place in some one of these veins is quite certain, but it is now perfectly separated from its original condition and appears simply as a loose transported bowlder. * * * The copper bowlder is associated with rocky matter, which in all respects resembles that associated with that metal in some portions of the mines before described, the rocky matter being bound together with innumerable strings of metal; but a very considerable portion of the whole is copper in a state of purity. While this mass of native copper can not fail to excite much interest, from its great size and purity, it must be borne in mind that it is a perfectly isolated mass, having no connection with any other; nor does the character of the country lead to the inference that veins of the metal occur in the immediate vicinity, though the mineral district crosses the country at a distance of but a few miles."

Leaving for the moment the question as to the origin of the copper rock, let us follow its history. Prior to 1843 not a pound of copper had been shipped commercially from Lake Superior. The billion and a half pounds which have been taken from that region have been mined since that year, and more than half that product has been taken from a mine discovered since the war of the rebellion ended. The Ontonagon bowlder was not regarded primarily in a commercial light; for its market value as ingot copper could not have exceeded $600.[2] Mr. Eldred's object in transporting it to the lower lakes was to exhibit it for money in the various cities of the East. It was a curiosity. As Senator Woodbridge said, it was "a splendid specimen of the mineral wealth of the 'Far West.'"

In 1841 Mr. Eldred arranged with Samuel Ashman, of Sault Ste. Marie, to act as his interpreter in the purchase of the copper rock from the Chippewa Indians, on whose lands it was situated. Obtaining a trading license from Mr. Ord, the Government agent, the two men set out for the mouth of the Ontonagon, where they met the chiefs and concluded the purchase for $150, of which sum $45 was paid in cash at the

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[1] Whittlesey, Charles, in Smithsonian Contributions, Vol. XIII.

[2] Senate Report on Wholesale Prices, Wages, and Transportation, 1893, I, p. 70, gives the prices of copper for sixty years.

time, and the remainder was paid in goods two years later. The party then proceeded about 26 miles up the river, climbed the high hill which intervened between the main stream and that point on the fork where the rock was situated, and raised it on skids. More than this they could not do; nor did they have greater success the following summer.

In 1843 Mr. Eldred started from Detroit with wheels and castings for a portable railway and car; and to protect his property rights, he secured from General Walter Cunningham, the United States mineral agent, a permit to occupy for mining purposes the section of land on which the bowlder stood. Arriving at the rock, Mr. Eldred was surprised and chagrined to find it in possession of a party of Wisconsin miners under the direction of Colonel Hammond, who had located the land under a permit made directly by the Secretary of War to Turner and Snyder, and by their agent transferred to Hammond. The only thing to do was to buy the rock again, and this Mr. Eldred did, paying for it $1,365.

It took a week for the party of 21 persons to get the rock up the 50-foot hill near the river; then they cut timbers and made a stout wooden railway track, placed the rock on the car, and moved it with capstan and chains as houses are moved. For four miles and a half, over hills 600 feet high, through valleys and deep ravines; through thick forests where the path had to be cut; through tangled underbrush, the home of pestiferous mosquitoes, this railway was laid and the copper bowlder was transported; and when at last the rock was lowered to the main stream, nature smiled on the labors of the workmen by sending a freshet to carry their heavily laden boat over the lower rapids and down to the lake.[1]

While arranging transportation to Sault Ste. Marie, Mr. Eldred was confronted by an order from the Secretary of War to General Cunningham directing him to seize the copper rock for transportation to Washington. "The persons claiming the rock have no right to it," says Secretary Porter, "but justice and equity would require that they be amply compensated for the trouble and expense of its removal from its position on the Ontonagon to the lake; and for this purpose General C. will examine into their accounts and allow them the costs, compensating them fully and fairly therefor, the sum, however, not to exceed $700. * * * If they set up a claim for the ownership of the article itself, that is not admitted or recognized, and their redress, if they have any, will be by an application to Congress."[2]

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[1] Jones's letter in New York Herald. I have carefully examined the statements made by Mr. Alfred Meads in the Ontonagon Miner of June 22, 1895, assigning to James Kirk Paul, the founder of the town of Ontonagon, the credit of bringing down the rock. Undoubtedly Captain Paul was in the party, but the proof is conclusive that all work was done under the direction of Mr. Eldred.

[2] War Department MSS. Letters Cunningham to Porter, August 28, 1843; Maynadier to Porter, September 27, 1843, and Porter's indorsement.

The sum mentioned by the Secretary being manifestly too small to compensate Mr. Eldred "fully and fairly," General Cunningham allowed the latter to transport the rock to Detroit, and promised that if the curiosity was ordered to Washington, Mr. Eldred should be placed in charge of it. On October 11, 1843, the bowlder was landed in Detroit[1] and placed on exhibition for a fee of 25 cents; and among those who embraced the opportunity to visit it was Henry R. Schoolcraft, who renewed an acquaintance with the copper monarch, formed twenty-three years before.[2] After less than a month of uninterrupted possession, United States District Attorney George C. Bates informed Mr. Eldred that the revenue cutter *Erie* was waiting at Detroit to receive the rock for transportation to the capital; and on November 9 the bowlder started on its long journey,[3] by way of Buffalo, the Erie Canal, and New York City, to Georgetown, District of Columbia. Mr. Eldred accompanied it as far as New York, and met it at Georgetown with a dray, by which it was hauled to the Quartermaster's Bureau of the War Department and deposited in the yard, where it remained until sometime subsequent to 1855.[4]

Mr. Eldred now appealed to Congress for redress; and it so happened that in the Senate William Woodbridge, of Michigan, was chairman of the Committee on Public Lands. An exhaustive report on the subject was made at the first session of the Twenty-eighth Congress, and three years later, by an act approved January 26, 1847, the Secretary of War was authorized "to allow and settle upon just and equitable

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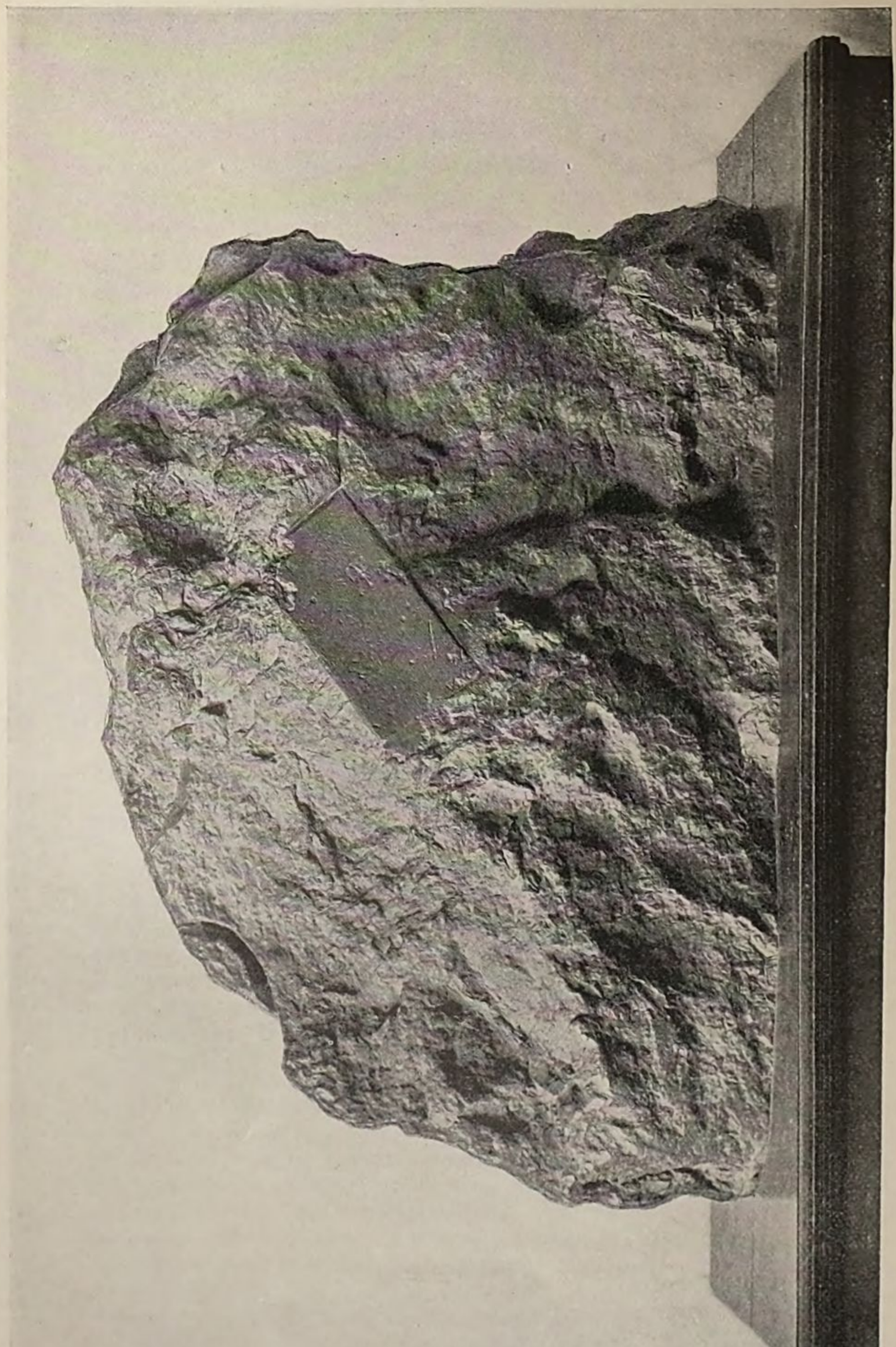
[1] Farmer's History of Detroit and Michigan, calendar of dates.

[2] Schoolcraft, Henry R. The American Indians. Rochester, 1851.

[3] Treasury Department MSS. Letters from Secretary Spencer to Captain Knapp, September 29, 1843; Knapp to Spencer, November 11, 1843; Captain Heintzelman's receipt, November 11, 1843.

[4] Roberts's Sketches of Detroit, 1855.

Doctor Thomas Wilson, of the National Museum, a second cousin of Cyrus Mendenhall, who was one of the early proprietors and workers of copper mines in Lake Superior (probably from 1840 to 1855 or 1856), contributes the following information, which is of interest in this connection: "My uncle, Thomas Mercer, when a young man, went from Columbiana County, Ohio, to Lake Superior as an assistant to his cousin. In about 1848 he came down from Lake Superior, by way of the canal, from Cleveland to Beaver with one of these immense masses of copper. He dined en route at my father's house at New Brighton, and in his company after dinner I rode with him on the boat as far as Rochester. I remember the appearance of the nugget of copper very well. It was as large or larger than the one in the National Museum, and when I saw the latter, I thought it was the same which I had seen on the boat. I learned from my father that the mass which we saw on the boat was taken to Pittsburg, under the belief that it would prove of considerable profit to its owners. It turned out to be a loss, however, owing to their inability to melt it or to cut it, or in any way divide or separate it into small enough pieces to handle. They built a fire over it as it stood in the yard. How they then treated it I do not know; nor do I know that, with all this labor, it was finally reduced. It brought no profit to the original owners." Dr. Wilson thinks that there must have been two or more of these large copper nuggets which were brought down the lakes from Lake Superior.



THE ONTONAGON COPPER BOWLDER IN THE NATIONAL MUSEUM.

terms the accounts of Julius Eldred and sons for their time[1] and expenses in purchasing and removing the mass of native copper commonly called the copper rock." The sum thus paid was $5,664.98.

From the yard of the old War Department to the National Museum is not a long journey for so traveled a rock, and we need spend no time on it. There is, however, another and a really important question as to the origin of the bowlder. Accepting the statements of Schoolcraft and Doctor Houghton that the copper rock as found was an isolated mass, but that it undoubtedly came from one of the veins in the narrow copper belt, let us examine the results of explorations made since their day.

During the winter of 1847–48 Mr. Samuel O. Knapp, the agent of the Minnesota mine, observed on the present location of that mine a curious depression in the soil, caused, as he conjectured, by the disintegration of a vein. Following up these indications, he came upon a cavern, the home of several porcupines. On clearing out the rubbish, he found many stone hammers; and at a depth of 18 feet he came upon a mass of native copper 10 feet long, 3 feet wide, and nearly 2 feet thick.[2] Its weight was more than 6 tons. This mass was found resting upon billets of oak supported by sleepers of the same wood. There were three courses of billets and two courses of sleepers. The wood had lost all its consistency, so that a knife blade penetrated it as easily as if it had been peat; but the earth packed about the copper gave that a firm support. By means of the cobwork the miners had raised the mass about 5 feet, or something less than one-quarter of the way to the mouth of the pit. The marks of fire used to detach the copper from the rock showed that the early miners were acquainted with a process used with effect by their successors. This fragment had been pounded until every projection was broken off and then had been left, when and for what reason is still unknown.[3] From similar pits on the same location came ten cart loads of ancient hammers, one of which weighed 39½ pounds and was fitted with two grooves for a double handle. There were also found a copper gad, a copper chisel with a socket in which was the remains of a copper handle, and fragments of wooden bailing bowls. At the Mesnard mine, in 1862, was found an 18-ton bowlder that the "ancient miners" had moved 48 feet from its original bed.

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[1] In Senate Report 260, Twenty-eighth Congress, first session, Mr. Eldred relates his trials and final success. Several of the official communications quoted in this article are printed in that report. The existence of the report, however, was developed from the communications which were kindly furnished me by Colonel F. C. Ainsworth, chief of the Record and Pension Division of the War Department; Captain C. T. Shoemaker, chief of the Revenue-Cutter Service, and Honorable T. Strobo Farrow, Auditor of the Treasury for the War Department.

[2] Foster & Whitney's Report. House Ex. Doc. 69, Thirty-first Congress, first session, p. 159.

[3] A cut and a full description of this find is given by Colonel Whittlesey in his article on Ancient Copper Mining in the Lake Superior Region, Smithsonian Contributions to Knowledge, XIII.

The fact that growing in the débris of one of these ancient pits was a hemlock having 395 annular rings places the date of the excavations before the days of Columbus. That they were made by a race distinct from the present Indians is inferred from the fact that the Indians knew nothing of copper in place; and they had no traditions of the ancient copper mines which cover the entire copper belt, and which have been to modern miners the best indications of the presence of that metal. Within 2 miles of one of these "ancient diggings," as they are called, the copper rock was found.

The question here arises, Was the Ontonagon bowlder detached by glacial action and carried southwesterly along the drift to the point whence eventually it dropped into the bed of the river; or is it the product of the mining operations of that busy people whose well-built boats with each recurring summer in past ages dotted the clear waters of Lake Superior, and whose keen search led them to the outcrops of copper as well among the inhospitable thickets of the mainland as on the wave-lashed islands of the greatest of lakes?

Such is the question propounded by Mr. Edwin J. Hulbert, who spent the best years of his life in a study of the copper country; and whose recently published work on "The Calumet Conglomerate" marks him as the most scientific explorer who ever accomplished great results in the Lake Superior copper country. Doubtless the question is unanswerable; but whether nature or man tore the copper rock from its original home, it stands to-day as the first considerable shipment of copper from the Lake Superior region and the largest mass ever taken away from a mine. It is unique also in this: The mines of the Ontonagon region belong to the past. The great Minnesota mine from which a 500-ton bowlder, valued at over $200,000, was taken, and whose stockholders received $30 for every dollar they put in, has long ago been surpassed by the Calumet & Hecla, whose ore contains but an insignificant proportion of mass copper. There are no more masses of virgin copper to be found; and the Ontonagon bowlder is not only the first, but it is also the last remaining representative of its kind.

TAXIDERMICAL METHODS IN THE LEYDEN MUSEUM, HOLLAND.

BY

R. W. SHUFELDT.

Associate in Zoölogy, U. S. National Museum.

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TAXIDERMICAL METHODS IN THE LEYDEN MUSEUM, HOLLAND.

By R. W. SHUFELDT,

Associate in Zoölogy, U. S. National Museum.

Since publishing my "Scientific Taxidermy for Museums,"[1] a number of well-known taxidermic artists in the museums of America and Europe have written me concerning the various methods employed in their art in the institutions they represent. There has also been published a work by Mr. Montagu-Browne, entitled "Artistic and Scientific Taxidermy and Modeling."[2] So far as the criticism of this last volume has come to me, it would appear that it has by no means been received with favor, either here or upon the Continent. Its main defects, however, will be pointed out by me in another connection soon, and will be only incidentally referred to in the present paper.

Of all th reports recently received, no one has excited my interest more, or apparently contained suggestions of greater positive value, than has a MS., illustrated by a large series of photographs, received from Mr. H. H. ter Meer, jr., on the staff of and præparator to the Museum of Natural History, of Leyden, Holland. This communication is so full and the photographs so instructive that it commends itself to taxidermists at large, and especially to those of this country, where the methods in this art are now attracting so much attention.

For many years Mr. H. H. ter Meer, jr., and his father have been engaged on the taxidermical work done in the Leyden Museum, where Doctor J. Büttikofer is conservator, and where Doctor Fredericus A. Jentick is in charge as director. Judging from the plates in my work upon "Scientific Taxidermy for Museum," these gentlemen all speak in the highest possible terms of the artistic work in this line that has up to the present time been accomplished in the U. S. National Museum. Especial delight is expressed upon examining the achievements in modeling the marine invertebrates, and "the mounting of the fowls, pigeons, and parrots," and the wild turkey called forth expressions of the most extravagant praise. Among the mammals, the bisons, the

[1] Report U. S. National Museum, 1892, pp. 369–436.

[2] London, Adam & Charles Black. 1896.

zebra, the tiger, and the rhinoceros, mounted by Jenness Richardson, came in for the most favorable criticism, and this was given without stint.

It is with no little envy, and with still more regret, that Mr. H. H. ter Meer compares the advantageous circumstances under which the finished pieces of work are placed upon exhibition at the National Museum, as contrasted with what happens to them at Leyden, where the building is old, and where "the animals, instead of being placed in groups, are packed away in a compact throng in dark cases, one animal admiring the tail of the other."[1]

Further discouragement is experienced from the fact that the Dutch biologists filling the more influential positions do not exert themselves, either by pen or word, to powerfully promote the art among them. There are, further, no organized taxidermical societies in the country, and little or no literature is produced to assist the taxidermic artist. Mr. H. H. ter Meer, jr., is a firm believer in and advocate of the higher education of taxidermists, as set forth in the aforesaid "Scientific Taxidermy for Museums," and he takes occasion to express himself very forcibly to that effect. Pleasure is expressed at the fact that the American taxidermists are thoroughly alive to the question that the day is well past when the workman can hope to produce satisfactory results by "stuffing skins of the forms they intend to preserve" instead of by the use of the model and the manikin.

For some years past Mr. H. H. ter Meer has practiced what Kerr, his able instructor, had taught him, and with "extraordinary dexterity" he sews strips of tow side by side upon the sculptured body of the mammal, in such a manner as to exactly imitate the superficial muscles and other parts in the way they occur in nature. Mammals' heads are "carved out of peat," and it "does not matter out of what substance a mammal is modeled, provided the form is reproduced exactly as it would be were the animal alive, and that it is possible to drive pins in it without bursting or breaking the artificially prepared body, in order to press the skin into the hollows between the muscles." It is especially enjoined that the prepared model of the animal's body be the exact reproduction of the original, before the skin is drawn over it, in order to obviate the necessity of subsequently introducing any additional filling between it and the latter. Kerr's methods of imitating the superficial anatomical parts require much patience and time to learn and successfully practice, and this is apt to discourage many

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[1] Since the present article was written the author has published three articles entitled "Taxidermy at the Leyden Museum," and these are illustrated by eleven halftone figures, showing the most recent pieces mounted by Mr. ter Meer and his father. One of these represent a fine group of jackals, so the charge that no group of mounted mammals exists at the Leyden Museum must now be set aside. Various other improvements have also been introduced in the taxidermical department of the institution in question. (See *Shooting and Fishing*, XXII, Nos. 8, 9, and 11. New York, June 10, 17, July 1, 1897. Pp. 146, 147, 168, 169, 206, and 207.)

young taxidermists at first, as it did Mr. H. H. ter Meer, but its advantages are so great when once accomplished, that no abandoning thereafter is ever entertained by the expert.

My correspondent has succeeded in inventing a material, after years of experiment and practice, that possesses the molding properties of clay, and that dries with great rapidity and never cracks after once setting. I regret to say he has not given his formula for this material, so much in demand the world over among taxidermic artists, and I know of no better encouragement that Mr. H. H. ter Meer can extend to his colleagues in the art than a full description of his materials and methods, and thus break down the ancient barrier of secrecy, which in times past has been one of the greatest drawbacks to the progress of the art.

This new material was first employed by him in October, 1894, at which time, or shortly after, he modeled the buffalo (*Bubalus mindorensis*) shown in Plate 4, figure 2. The material is worked in a thin layer over the hollow wooden frame representing the animal's form, even to include the head, and the figure shows the result, at the point where it is to receive the skin over it. No skull was used, and the entire skeleton of this specimen could thus be saved for the Leyden Museum, where it is now upon exhibition.

This being the first attempt with the new material, it naturally presents some faults, yet upon the whole the beauty of the model can be easily appreciated from the figure, and it possesses the additional advantage of being very light. Smaller mammals—the size of a domestic cat, for example—are still mounted after the Kerr method, it proving the most successful. This new material, and what can be accomplished by its use, has received the approval of Sir William Flower, Doctor Bowdler Sharpe, and the distinguished artist, J. G. Keulemans, all of whom visited the museum at Leyden last year, to investigate the process. Mr. H. H. ter Meer, sr., mounts many of the birds at this institution, although the son also exerts his skill in this direction. Some of these are beautiful examples of taxidermy, and from the series sent me, I select a few, and these are given in my plates. Figure 2, of Plate 2, is an excellent specimen of *Buteo lagopus*, and equally good ones are seen in plate 6, figures 2 and 3 (*Botaurus stellaris* and *Pandion haliaëtus*). It is said that Mr. H. H. ter Meer, sr., makes the artificial bodies for his birds in so perfect a manner, that after the skin has been placed over it, in any case whatever, he finds it quite unnecessary to use "in strapping" either thread or pieces of cardboard to hold the feathers in place. This is not even done in either the tail or the wings. To show these results, photographs have been sent me of *Cygnus olor*, *Oedicnemus crepitans*, *Buteo vulgaris*, *Larus ridibundus*, and the others shown in the plates. They are all fine pieces of work apparently, and are especially to be admired for their peculiar lifelike fidelity to the originals.

By the aid of his special methods Mr. H. H. ter Meer, jr., has mounted some fine mammal pieces, and a number of these are likewise shown in the accompanying plates—as, for example, the female and young of *Simia satyrus* (Plate 3, fig. 2, July, 1895), and a still better one, another female of the same species (also preserved in July, 1895), and shown with its model in Plate 1 and Plate 2, figures 1 and 3. This is one of the most admirable and lifelike results that I have ever had the pleasure of examining, and stands far ahead of the average mounted Simian seen in the cases of the larger museums of the world. At the time of its death it was nearly full-grown, and so is a most valuable specimen. In April, 1896, the senior H. H. ter Meer mounted the fine example of the Macaque (*Macacus coninus*) shown in Plate 3, figure 1, while only a month before that the head of *Felis leo*, shown in Plate 4, figure 1, was prepared. These talented taxidermists take especial pride in their mounted specimen of *Ovis tragelaphus* (May, 1896), and no less than three photographs of this piece have been submitted to me, presenting it from different views. Two of these are shown in Plate 5 and Plate 6, figure 1.

Mr. H. H. ter Meer fully agrees with the present writer in the use of photographs and sketches as aids to the work of the taxidermic artist, and by such means he has fully illustrated the topographical anatomy of both the domestic cat and the horse, showing the muscles in various positions of the body. In this connection he deplores the scarcity of helpful manuals and text-books in such departments, and holds The Cat, by Professor Mivart, and Specht's designs of mammals, as among the best that have thus far appeared, and he also speaks of the figures in Brehm's "Thierleben" as also extremely useful.

When at Darmstadt some years ago, he "had an opportunity to become acquainted with Mr. Kusthart's method of mammal mounting. After having glued large pieces of peat on a frame, he carves [out] like a sculptor the whole animal from the peat, and thus obtains excellent results, by adjusting the prepared skin over the sculptured body." "The gluing of the peat on the frame is, however, a very tedious piece of work, but it admits of having the skin subsequently fixed over it most accurately with pins." My correspondent also comments upon the taxidermical methods now coming into vogue in Paris, where they cover the hollow wooden frame representing the body of the animal with a layer of plaster-of-paris about one-half an inch thick. Some tow is used in connection with the frame, and while the plaster is in a soft condition the taxidermist carves out rapidly the form of the animal. This method was published last year in *l'Illustration*, and the article was illustrated by means of reproductions of photographs, giving various stages of the process as applied to a buffalo. Mr. H. H. ter Meer says the body was artistically prepared, and exhibited considerable study, though he doubts that the skin can be fixed into the sulci

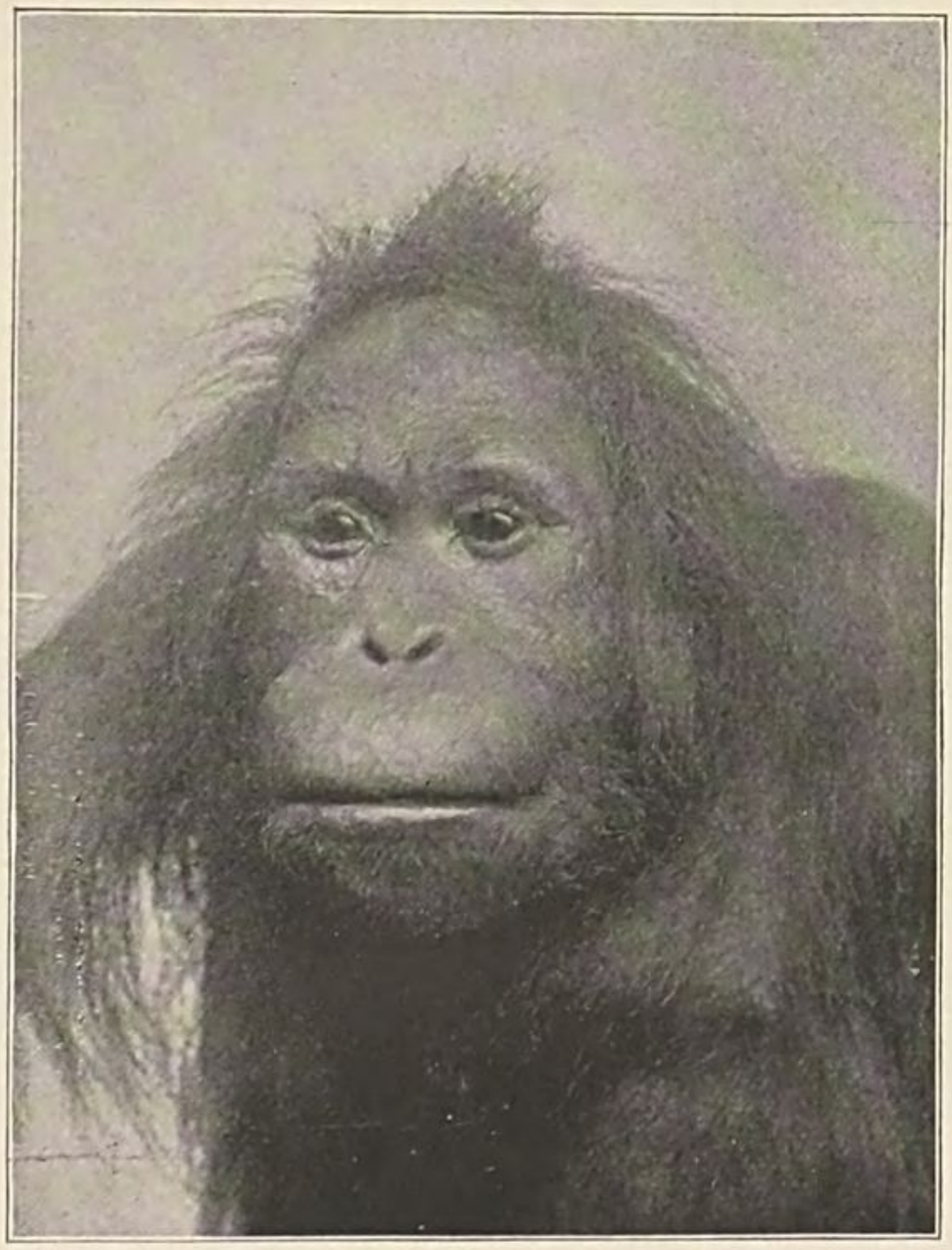
among the muscles by means of pins, as the plaster would set too soon for the purpose.

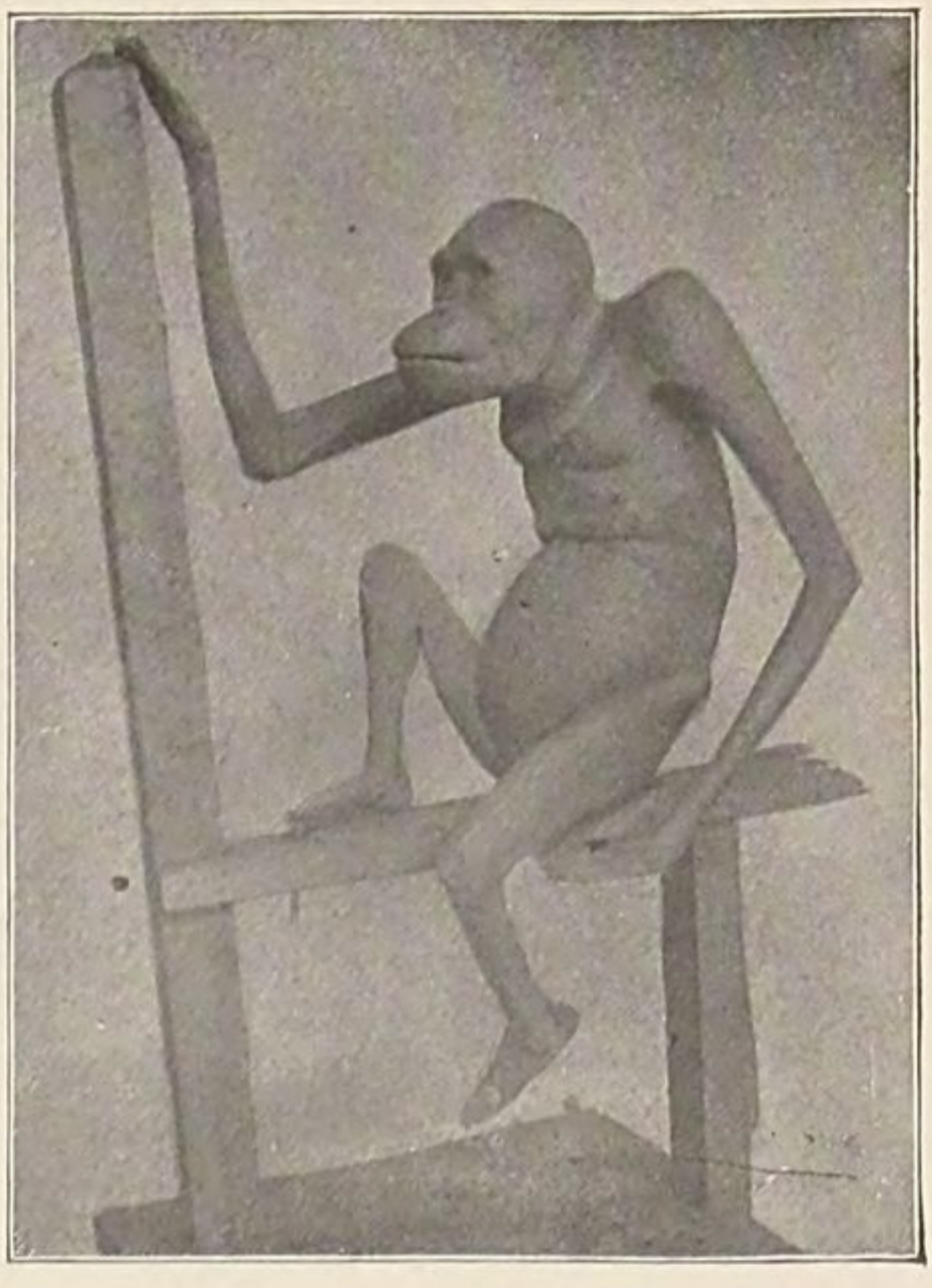
In terms most unqualified he condemns the methods of mammal mounting practiced by Mr. Montagu-Browne at the Leicester Museum, and described in his recent work. And he is quite correct when he points out that it is simply impossible to get the correct form of a large mammal for the purpose of a model by taking casts in plaster "of its lifeless, flayed body."

The method sees its most useful end in the reproduction of the forms of dead animals—not living ones—and as the method is a time-wasting and mechanical one, the hand of the skilled taxidermic artist must ever be missed in its employment.

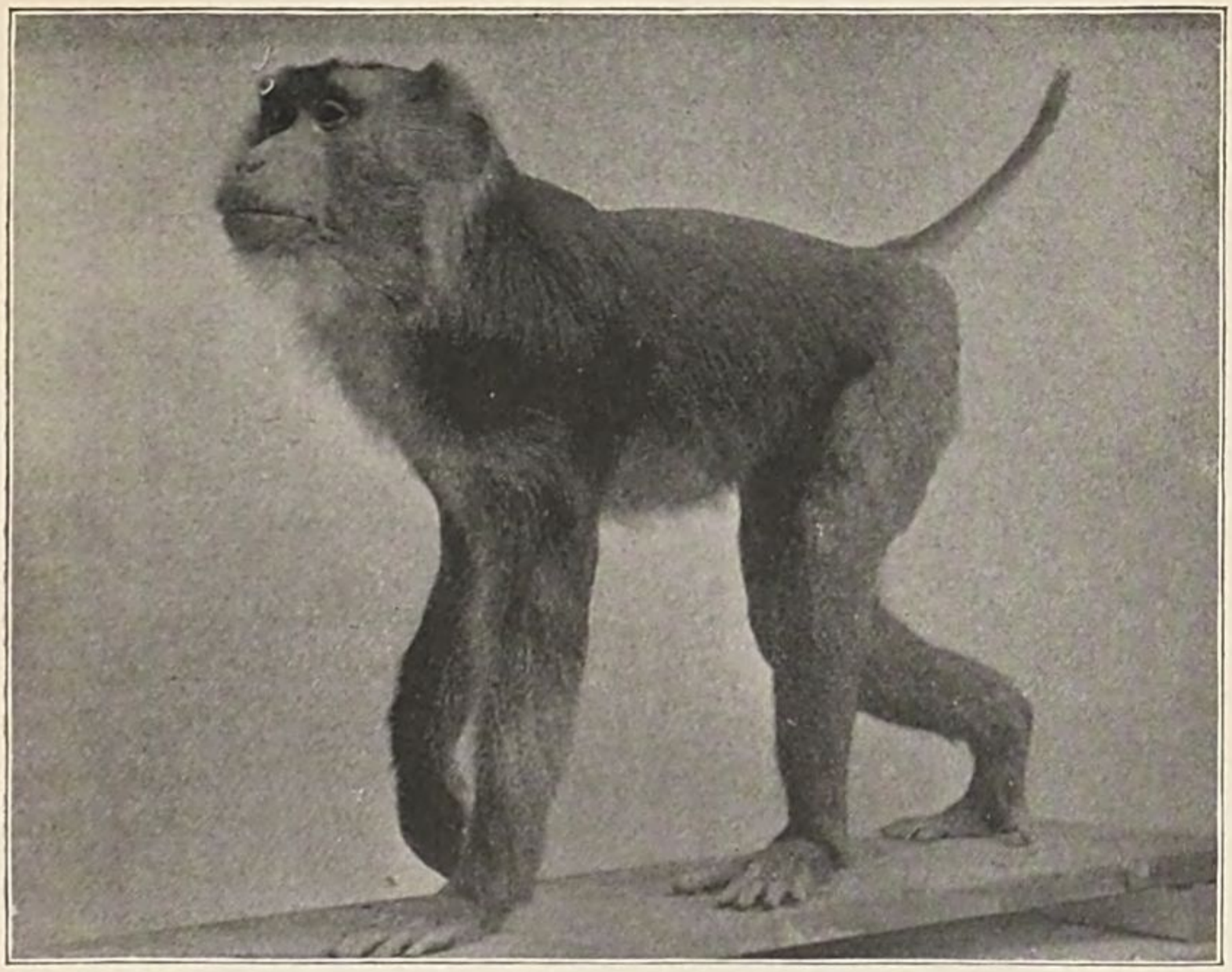
MOUNTED SPECIMEN OF ORANG-OUTAN.

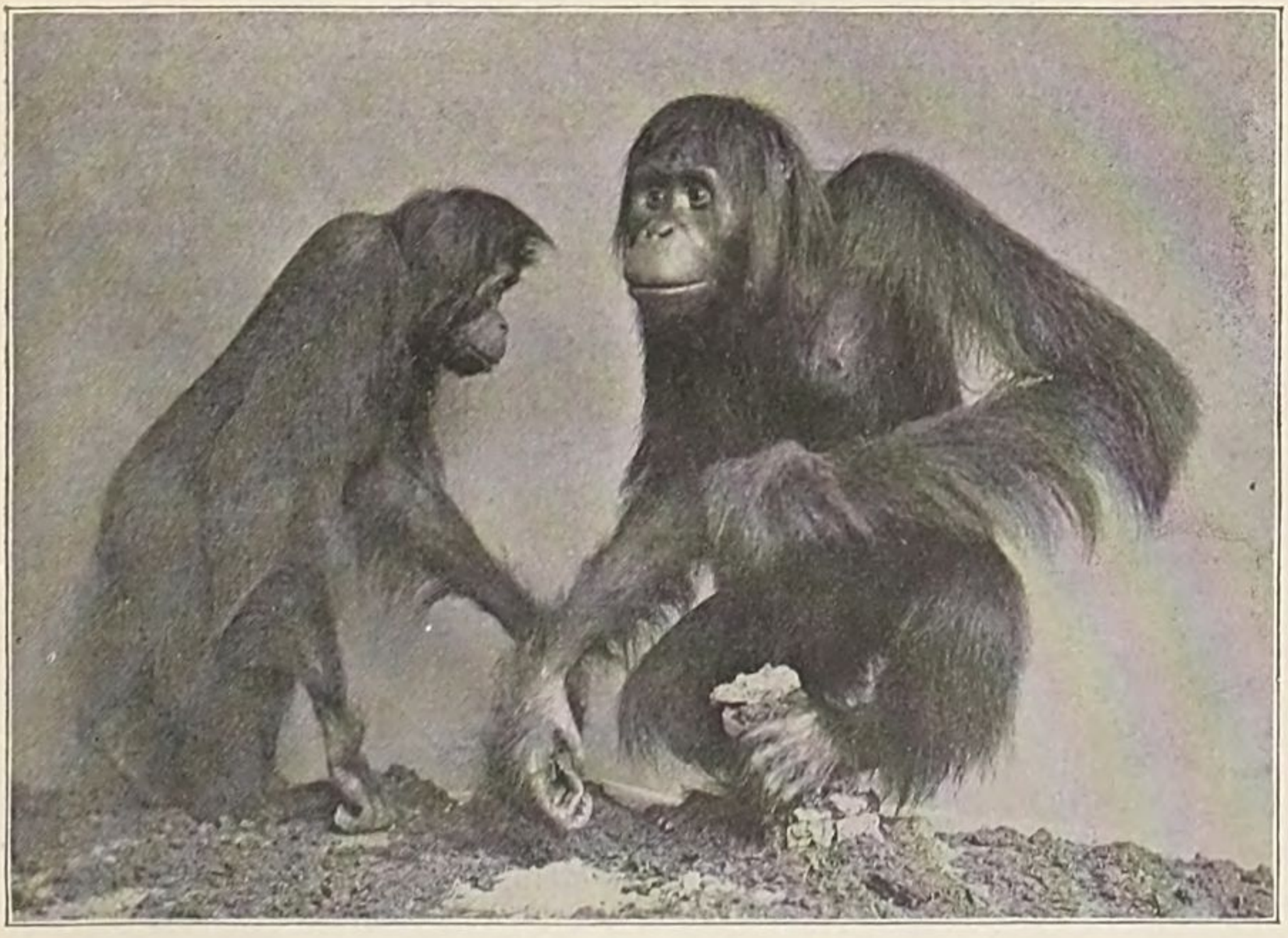
(Leyden Museum, Holland.)





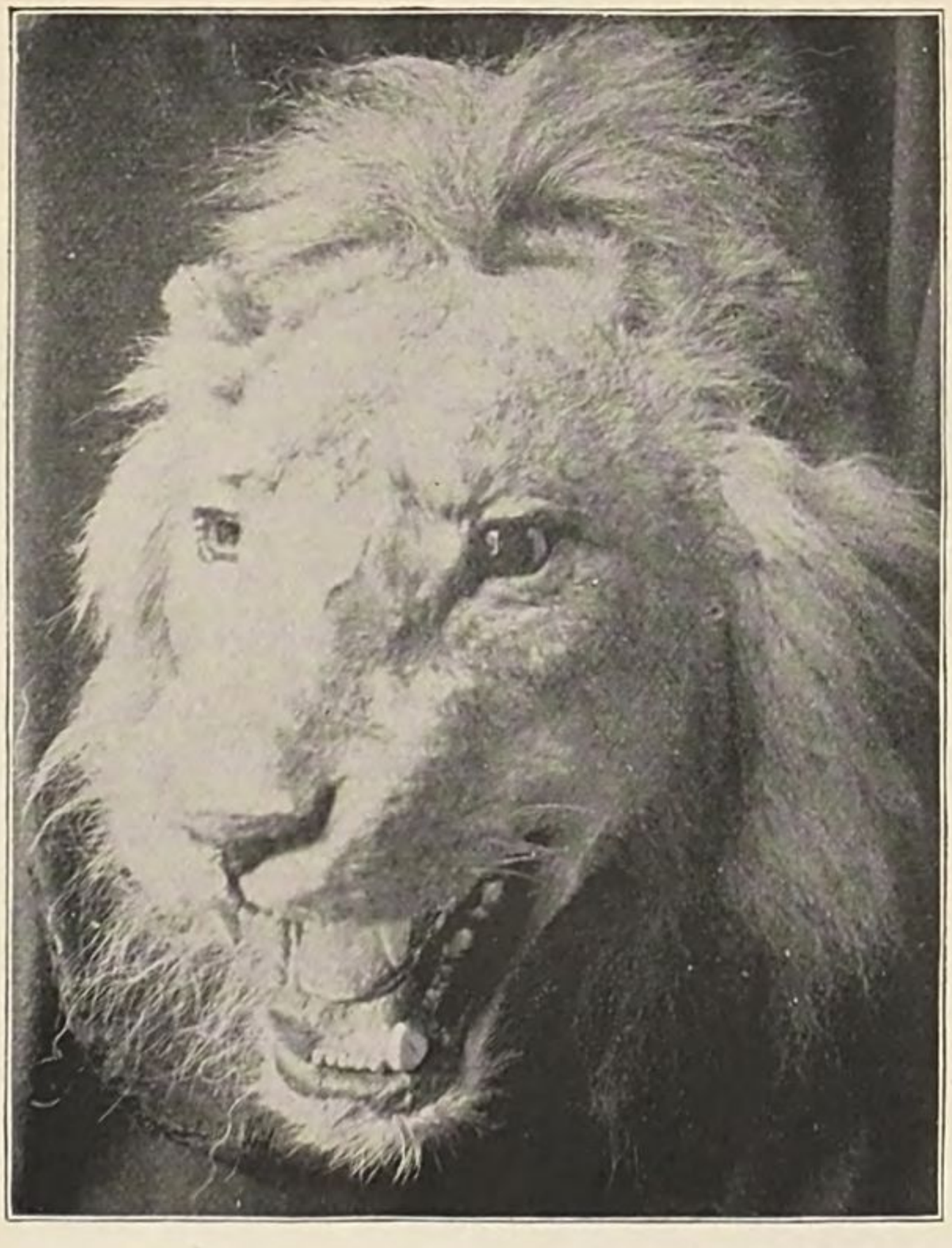
MOUNTED SPECIMENS FROM THE LEYDEN MUSEUM.



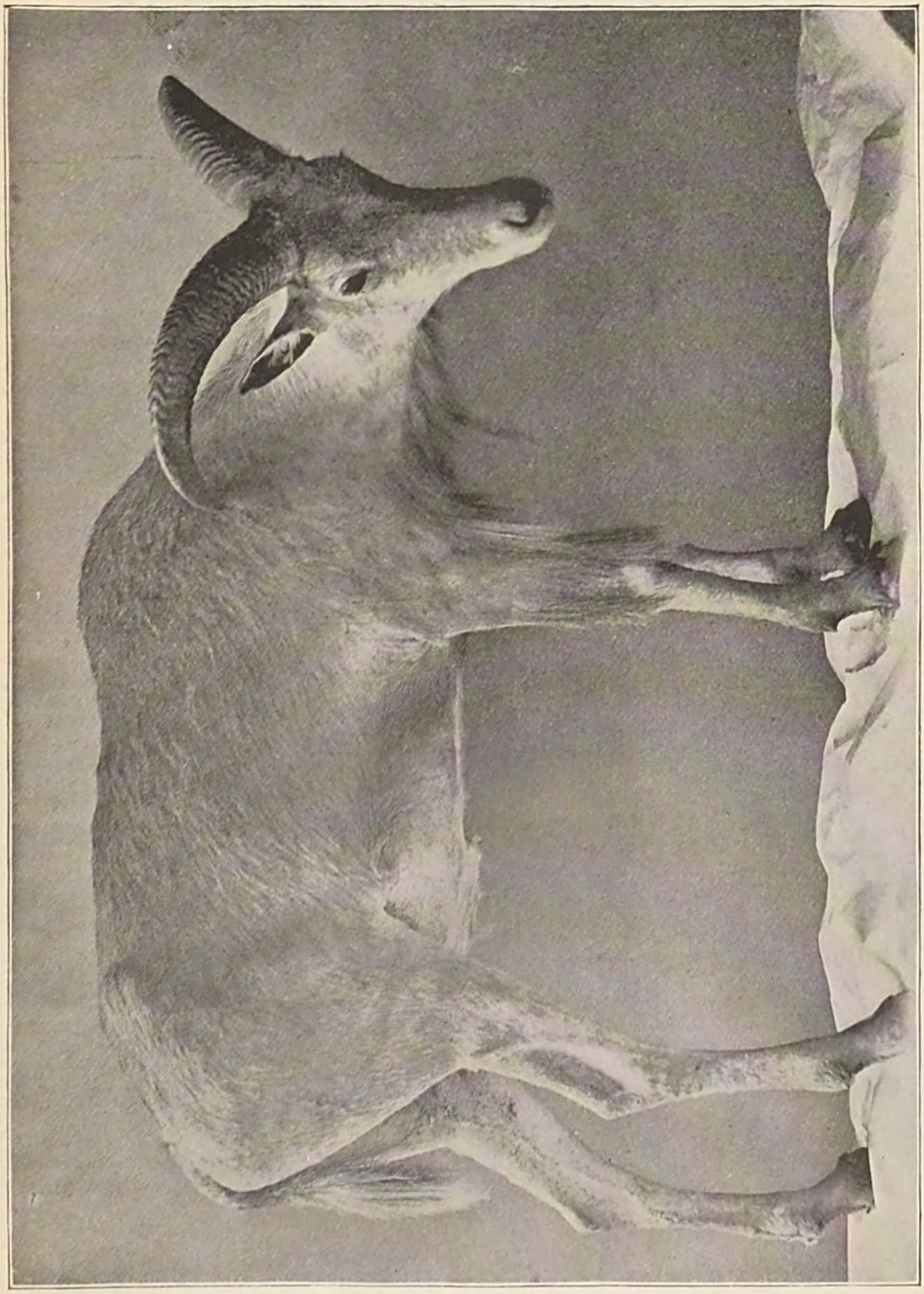


MOUNTED SPECIMENS OF ORANG-OUTANS.

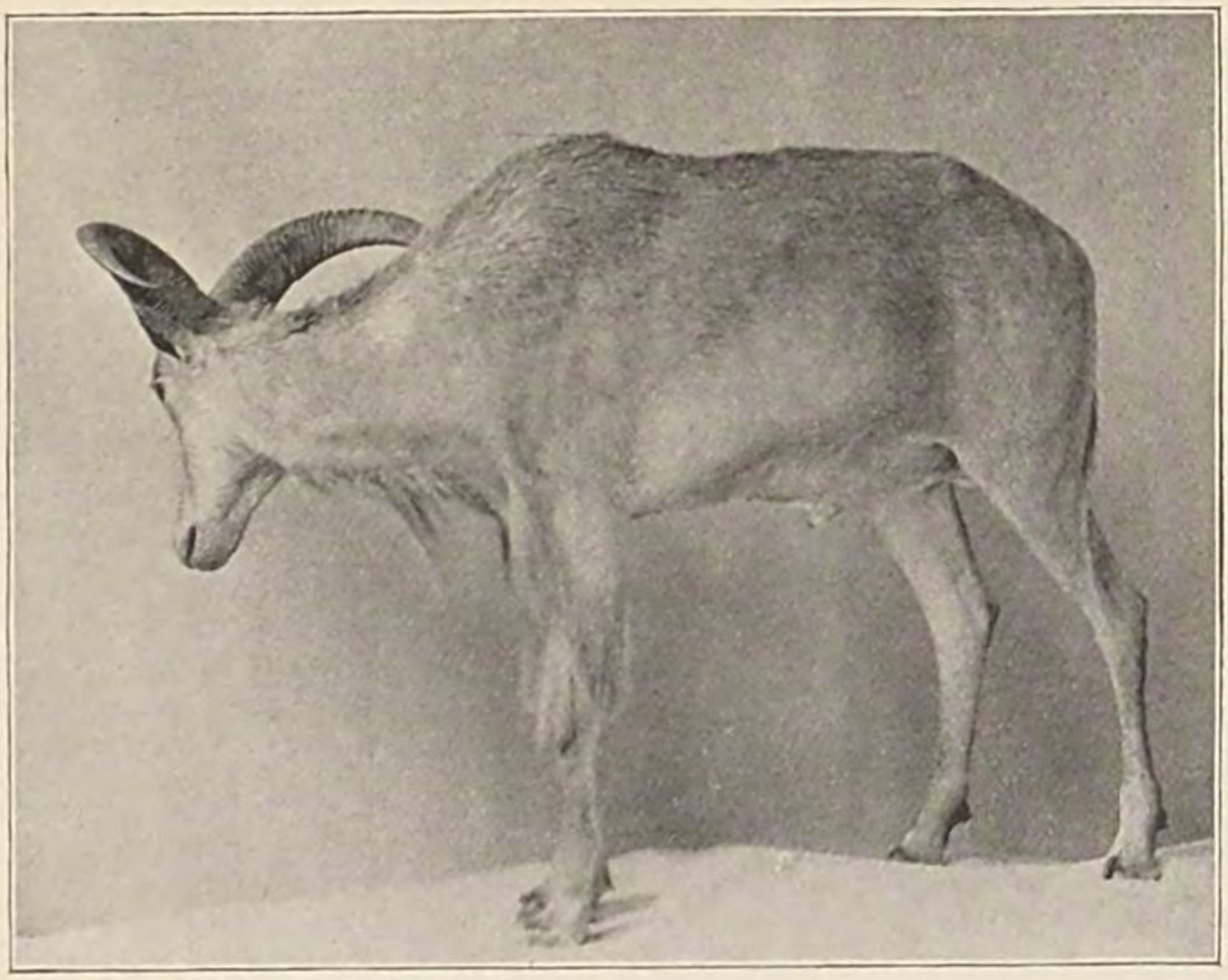
(Leyden Museum, Holland.)

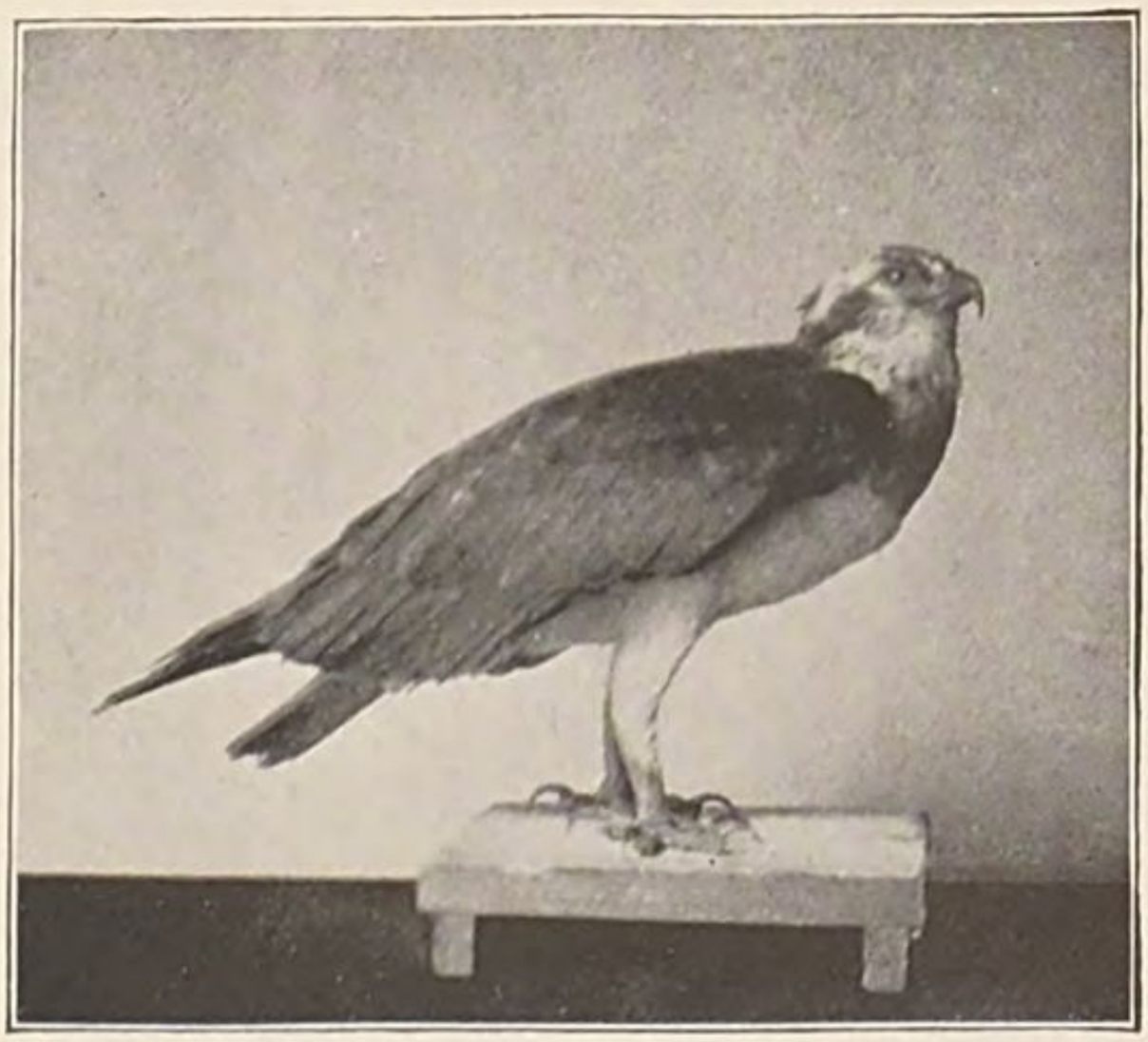


MOUNTED SPECIMENS FROM THE LEYDEN MUSEUM.



MOUNTED SPECIMEN OF A MOUFLON.
(Leyden Museum, Holland.)





MOUNTED SPECIMENS FROM THE LEYDEN MUSEUM.

THE ANTIQUITY OF THE RED RACE IN AMERICA.

BY

THOMAS WILSON,

Curator, Department of Prehistoric Anthropology, U. S. National Museum.

1039

THE ANTIQUITY OF THE RED RACE IN AMERICA.

By THOMAS WILSON,

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The only discussion in this paper is as to the antiquity of the Indian or red race, and this applies only to the aborigines found here by Columbus at the time of his discovery. No question is involved of another or earlier race, by whatever name called, whether mound-builder or paleolithic.

The ancestry of the American race has been variously attributed to Semite, Phœnician, and Mongolian races, and, possibly, to a mixture of some or all, with many additions. The best of these theories have been based only on alleged similarities in characteristics of the Indians and their alleged ancestors.

The argument can be placed on a broader basis; evidence can be adduced bearing on more extended propositions and can be applied to a larger group of these peoples.

The preliminary proposition is that the American race of Indians is practically the same throughout the entire hemisphere. With all their diversity of anatomy and physiology (which diversity, by the way, is not greater among Indians than it is among various members of the white or black races), they are of the same type, and form but a single race. Doctor Brinton gave this as his opinion in his address before the Section of Anthropology of the American Association for the Advancement of Science at its New York meeting. It is the basis of his book on "The American Race." Darwin remarks the close family resemblance between distant tribes in America. Doctor Coleman asserts the essential physical identity of the American Indian. Starting, then, with this assumption of the identity of race, it is to be argued that it began in America in one of two ways—either by evolution from the lower animals or by migration as man from other countries.

In whichever of these ways the red man appeared in America, we are entitled to suppose, and may fairly argue, that in the beginning the race was here represented by but few individuals. There may have been but a single pair, or there may have been a hundred pairs, of individuals. Either number will suit the argument. Accepting, then, as a fact, the beginning of the red man in America with a small

number of individuals, it follows that they occupied a restricted locality. This particular locality may have been on the east coast or on the west coast, may have been north or south. The North American Indian has been on this hemisphere such a length of time that, branching out from this little colony in a single locality by ordinary procreation, he has so increased in numbers that at the time of the discovery by Columbus, it is estimated that there were from five to eleven millions.

From the single locality which the small colony originally inhabited, it had also extended itself territorially, and had populated pretty equally the hemisphere from the Arctic Circle on the north to Terra del Fuego on the south, and from the Atlantic Ocean on the east to the Pacific Ocean on the west.

The first point is, that this increase in number, and this extension in territory, required a long period of time, and are proofs of the antiquity of the race.

The confusion of tongues and increase in the number of languages among the Indians is another evidence of their antiquity. When the first colony of Indians appeared, whether by evolution or migration, they could have spoken practically but one language. Suppose, in case of migration, that they spoke many languages prior to their coming together on these, to them, foreign shores, after their arrival they would inevitably speak but one language. They would invent a common language if none existed. This would not be difficult for a colony small in numbers. With this for a starting point, we may see what they have done. They spread themselves up and down the valleys, across the rivers, and over the mountains. While at first they may have retained their communication with the parent colony and kept up their original language, it continued only while those relations were maintained. When the offspring got so far distant that they did not visit the parent colony and had no relation with its members, they invented their own languages, different from those of their ancestors, and this continued until they became a parent colony, sending forth younger colonies, which, in their turn, cut off their relations and invented new languages. So they went from east to west, north to south. This continued for such a great length of time that, not only had they come at the time of the discovery to occupy the entire hemisphere, but had also established (according to the investigations of the Bureau of Ethnology) not less than two hundred separate languages, fifty-two of which belonged to North America alone, with dialects and variations innumerable. If we accept these facts (and it appears as though we must), the corollary of the immensity of the time is inevitable.

The different cultures among the aborigines or Indians of the Western Hemisphere in different localities or portions of the country point to the same general conclusion. Over all Canada and the United States, except the extreme southwest, the culture, or rather the sav-

agery, of the nomadic Indians prevailed, which was indicated by their principal occupations—war, hunting, and fishing.

Yet there are broad lines of demarcation in their culture, the principal and best defined of which was the building of mounds and earthworks. These monuments, of such great magnitude and extent in certain localities in the interior of the United States, did not extend over half its territory. The mounds and earthworks were confined between the twenty-fifth and the fifty-first northern parallels of latitude, and between the sixty-ninth and one hundred and first meridians of longitude. The mound-building area had its greatest length from Cape Sable, Florida, to Lake Winnipeg, Manitoba, and its greatest breadth from Point Pemaquid, Maine, to Bismarck, North Dakota. No mounds or earthworks are found outside this area.

The culture of the aborigines occupying Mexico and Central America, with the pueblo regions of Arizona and New Mexico, was of a totally different character from that in the other regions of North America. They were sedentary, agricultural, religious, and highly ceremonial; they built immense monuments of the most enduring character, the outside of the stone walls of some of which were decorated in a high order of art, resembling more the great Certosa of Pavia than any other monument in Europe. The Teocalli, or mounds of ceremony or sacrifice, were immense. The manufacture and use of stone images and idols were extensive and surprising to the last degree. Their working of jade and the extensive use thereof surpasses that of any other locality in prehistoric times. Their pottery excites our wonder and admiration; some specimens for their beauty, their elegance of form, and their fineness of decoration; other specimens, of idols or images, are astonishing on account of the precision of their manufacture and of the difficulty of its accomplishment by hand.

The culture of Central America, Nicaragua, Yucatan, Costa Rica, was as different from that of Mexico as the Mexican was from that of the red Indian of the north. The gold ornaments of Chiriqui and Quimbaya are evidence, not simply of a different material, but of a different art in working that material. The pottery of Mexico, Nicaragua, and Costa Rica displays such marked differences of kind, form, color, decoration, size, and mode of manufacture as to show as much difference between the cultures of these countries with a separation between them as clearly marked and isolation each from the other as between any three countries in modern times. The pottery milk pans made in western Ohio and used there by our mothers were not more different from the porcelain of Sevres or Meissen or the ware of Delft than was the aboriginal pottery of America in different localities.

The culture of Colombia and Peru in South America tells the same story of separation and long-continued isolation, and it finds its continuation among the aborigines of the Orinoco, Amazon, La Plata, and so on south to Patagonia. The isolation of the Patagonians has been

continued for such a length of time as that, they have not only maintained a state of brutal savagery peculiar to themselves, but they have made a distinct physical or somotological change, amounting not simply to a different tribe, but almost to a different race, in that they are the tallest people in the hemisphere, and, possibly, in the world.

Yet with all these differences, physical, technological, and sociological, the aborigines of the hemisphere have retained their original characteristics so as to stamp them all of one race—blood relations—all belonging to the same stock and derived from the same ancestry. With all these differences, the principal implements and objects employed by the various tribes or peoples in all or any of the countries in the hemisphere, whether in North or South America, were practically the same, thus continuing the evidence of their relationship and early communication. The hammerstones, polished stone hatchets, the scrapers, spindle whorls, and the great mass of aboriginal implements of stone made by chipping or flaking, comprising arrow and spear heads, knives, daggers, and poniards, are all so much alike as to show their relationship and, consequently, the relationship of the tribes or peoples who made them. This being accepted, these immense differences are accounted for only by the separation and isolation of certain of the tribes of the red men, and this is evidence of their great antiquity and long-continued occupation of the country.

Again, the fixedness of type and the persistence of animal characteristics among the red Indians are further evidence. It is an accepted anthropological and ethnological fact that the older a race is the more deeply seated and permanently fixed become the traits of character in its people. This carries with it the correlative proposition that the more permanent the characteristics of a race, the better the evidence of its antiquity. Applying this rule to the American Indians, we find that, with all the diversity claimed, their characteristics are persistent, even more than those of the white, the yellow, or the black races, and that this includes the physical as well as the mental, moral, and sociological traits. That the wild Indian is harder to tame than any other human animal can only be accounted for on one of two theories—either he has greater natural and original individuality, independence, and self-reliance, a higher desire for liberty, and a determination to overcome all obstacles in the way of maintaining that liberty, or else it is the result of persistence through many generations in the condition of savagery. Possibly it may be a combination of the two, and the latter has produced the former. But in any event the fact remains that the American Indian has greater fixity of type and of characteristics than have other races, and this indicates, if it does not prove, the long-continued and persistent exercise of the conditions which produced these characteristics and, consequently, his high antiquity.

The discovery of America found the natives in that stage of culture known in Europe as the neolithic period, or polished stone age. His cutting implements were of stone and not of metal, and by whatever method he shaped or made them, the finishing was by grinding or polishing. The similarities of the Indian's culture with that of other countries show that, if he migrated from any of these countries bringing this culture with him, he did so at a period when they were in the neolithic stage. This stage, and the one subsequent to it, was, in the Eastern hemisphere, entirely in prehistoric times, and came to an end at an early period. It belonged to the first and second, possibly the third, cities of Troy, on the plain of Hissarlik, and came to an end before the beginning of culture in Greece. When Homer wrote, it had passed, not only behind the beginnings of Rome, but behind her predecessors in Italy, the Etruscans. The introduction of bronze into France and England, probably 2,000 years B. C., sounded the death knell of the neolithic period and was the beginning of its end in those countries. In Asia the historical evidence shows even an earlier cessation of the neolithic period. The period of the Chinese civilization carries us back much farther, and shows the people of that country to have passed beyond the neolithic or polished stone age much earlier. Now the occupiers of American soil were emigrants from some, or, possibly, all of the countries mentioned, but, whichever it may have been, the emigration must have taken place during the neolithic age, and not after its close. Western Europe was the latest country in which the neolithic period came to a close and was succeeded by the age of bronze. So the commencement of the age of bronze in Europe affords a suppositious mark in the history of our country as the latest date at which the neolithic migration to America could have taken place. How much earlier it might have been, is a matter of speculation.

These arguments, based upon facts which appear indisputable, go to show that the migration by which the American race came to occupy the Western Hemisphere could not have been less than two thousand years prior to the Christian era, but that, if they came from other countries, they might have come a long time before.

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